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Methadone maintenance : a program-evaluation study of a private clinic at Windsor Western Hospital Centre.

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METHADONE MAINTENANCE:

A Program-Evaluation Study of a Private Clinic at Windsor Western Hospital Centre

by

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ABSTRACT

The purpose of the research study was to describe a population of heroin addicts receiving methadone maintenance treatment at Windsor Western Hospital Centre.

The research population of twenty-four methadone patients was examined according to demographic, psychological, social and drug-related variables. In addition to the descriptive components of the study, the researchers evaluated the degree to which the patients were rehabilitated in four areas. These were: 1) criminality, 2) employment, 3) extraneous drug use, and 4) social relationships. Data was gathered through the use of existing hospital records, a structured questionnaire, two psychological tests and urinalysis.

Of the seventeen males and seven females studied, the researchers found that the age ranged from eighteen to twenty-nine. These patients were found to have less crime and a more stable, legal source of income after treatment than they had before treatment. The population was found to be using extraneous drugs while in treatment 7% of the time during a two month evaluation period. Amphetamines were abused sixty-two times, heroin forty-five times, and barbiturates thirteen times out of a possible 1,560 times.

The psychological tests of these individuals revealed

that 41.7% of the total population were suffering from serious emotional disorders. The population, in general, showed elevated scores on the Minnesota Multiphasic Inventory for Psychopathic-Deviance, Schizophrenia and Hypomania.

The researchers found that there was little relationship between methadone dosage and length of treatment when comparatively analyzed with extraneous drug use. A slight negatave correlation was found to exist between extraneous drug use and group therapy attendance indicating that the more frequent the group attendance, the less extraneous drugs were found in the urine.

Incidental findings of the study indicated that further research was required to explain how improved social relationships with non drug-related friends increases crime, yet, reduces extraneous drug use. Conversely, further study is indicated to explain how improved social relationships with drug-related friends decreases crime and increases extraneous drug use.

The research project suggests that methadone treatment reduces criminality and extraneous drug use while it facilitates a shift from illegal occupations to socially acceptable sources of income.

The researchers concluded that continued research regarding the effectiveness of methadone treatment is still necessary; however, they recommended that research should now be focused on relationship and quality of life issues

since methadone treatment has achieved some of its initial goals in the rehabilitation of heroin addicts.

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CHAPTER I

INTRODUCTION

Heroin addiction has been one of the longest standing social problems of Western society. In Canada, the LeDain Commission reported that the most common opiate dependence is heroin.[1] In 1974, the Federal Bureau of Dangerous Drugs published the number of known drug users across Canada which indicated that the known heroin users totaled 8,904.[2]

Throughout the history of heroin addiction, treatment has ranged from punishment of the addict to supplying the addict with sufficient dosages of heroin to maintain his habit. The addict, therefore, has been cast in the diverse roles of a criminal and more recently of a patient.

The researchers' study addressed itself to the addict as patient. Specifically, the researchers investigated the patient population of the Methadone Maintenance program at Windsor Western Hospital Centre. The Methadone program has utilized one of the more recent modalities in the treatment of heroin addiction. Methadone was developed in Germany

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[1] A Report of the Commission of Inquiry into the Non-Medical Use of Drugs, Treatment (Information Canada, Ottawa, 1972), p. 10.

[2] Bryne Carruthers, "Canada Estimates Number of Actual Drug Users," The Journal, May 1, 1974, p. 1.

during World War II as a synthetic narcotic substitute for morphine which was in short supply.[3] In the early 1960's, methadone was experimentally used in the treatment of opiate addiction by Drs. Dole and Nyswander in New York City.[4] These two pioneers in heroin treatment reported that heroin addicts who were withdrawn from their heroin dependency; inexorably returned to their addictive state very soon after treatment withdrawal. Vaillant asserted that, in the treatment of heroin addiction, withdrawing the addict from his drug of dependency resulted in only two percent remaining drug free.[5]

Since the 1960's methadone treatment for heroin addiction has successfully enabled the addict to function without requiring daily doses of heroin for his existence.[6] Methadone treatment does not require total abstinence from a medically prescribed drug as an initial goal in treatment. While methadone was substituted for heroin, the criminality

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[3]Dorothy Nelkin, Methadone Maintenance: A Technological Fix (New York: George Braziller, 1973), p. 40.

[4]Vincent Dole and Marie Nyswander, "A Medical Treatment for Diacetylmorphine (Heroin) Addiction," Journal of the American Medical Association, XCXIII (August, 1965), 80-84.

[5]G. E. Vaillant, "The Natural History of Narcotic Drug Addiction," Seminars in Psychiatry, II (1970), 486-489.

[6]Vincent Dole and Marie Nyswander, "Rehabilitation of the Street Addict," Archives of Environmental Health, XIV (1967), 477-480.

associated with obtaining heroin use can diminish because the source of the addictive substance was within a socially accepted structure.

The program that the researchers evaluated was one of many of those structures which have proliferated throughout United States and Canada within the last decade. Evaluation of the Methadone Maintenance Program at Windsor Western Hospital Centre was considered necessary since a substantial data bank was required to assess methadone maintenance treatment for heroin addiction. The Windsor program was among the limited number of methadone programs in Canada.[7] In view of the paucity of methadone maintenance experience in Canada, the researchers believed that an investigation might contribute to a broader understanding of the treatment of opiate dependence in Canada. The need for investigatory research became apparent when one of the researchers was working with the methadone patients of the Windsor program. The researcher became aware that the methadone maintenance program was the most frequent response to heroin addiction employed in Windsor, Ontario. The researcher was concerned that although methadone was an ethical method of treatment serving approximately thirty former heroin addicts, a study was required to examine how successful the Windsor

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[7]The actual number of programs in Canada is not documented in one article. The researchers know through experience, however, that programs exist in Vancouver, Montreal, Toronto, Niagara Falls, and Windsor. The total number of programs in Canada is less than ten.

program has been in serving the client population.

I. Description of the Windsor Program

The Windsor program began on September 9, 1972 at Windsor Western Hospital Centre under the direction of Dr. Walter Cassidy, a local psychiatrist who has pursued a personal interest in the treatment of heroin addiction. While this program was essentially a private program operating in a public hospital, the Addiction Research Foundation, (A.R.F.), St. Clair region, provided staff to the clinic for two purposes. Firstly, the A.R.F. agreed to do all initial screening of heroin addicts requesting methadone treatment. The initial screening established the veracity of heroin addiction in addition to assessing the level of motivation of the addict to function within a highly structured outpatient treatment program.

Secondly, the A.R.F. provided the clinic with a group therapist, on a part-time basis. The responsibility of the therapist was to provide a voluntary group therapy experience to those addicts who were interested in seeking additional help for psychological and social problems. The therapist also provided some individual direction in assessing and treating personal problems presented by these addicts. Furthermore, the group therapist was responsible for training the full-time nurse, assigned to the clinic, in a practical approach to therapeutic interventions with the addicts. As part of the training in interventive

techniques, the nurse participated in the group therapy experience. In summary, the group therapist played the role of both consultant and therapist in the program's operation. The therapist was responsible both to the A.R.F. and Dr. Walter Cassidy, the program's director, while the nurse was ultimately responsible to the appropriate nursing supervisor of the hospital.

The program served approximately thirty former heroin addicts who were being treated with methadone. If, after the initial screening by Addiction Research Foundation, the addict met the requirements of the program, he would be hospitalized for a period of seven to ten days, providing extended care was not required due to the presence of other physiologic or psychologic dysfunction. The screening process determined if the addict was eligible for admission into the program. The criteria were that they must have been: 1) eighteen years of age or older, 2) currently addicted and have been addicted to an opiate for one or more years, 3) previously treated for opiate addiction, 4) sufficiently motivated to adjust to a highly structured outpatient clinic, and 5) not been dangerous to the safety of the clinic staff.

After the initial screening by Addiction Research Foundation, the program was conceptualized into three phases.

Phase I provided an opportunity to a highly motivated section of the heroin population who expressed

the desire to live with a drug-free status. If the person has had a previous treatment history for heroin addiction and has been addicted for more than one year, the addict can still be detoxified and released in the seven to ten days if he requested such a service.

In addition to the highly motivated group, the young heroin abuser who was diagnosed as an occasional user and who rapidly moved toward an addicted state was offered immediate detoxification for his addictive habits in the hope that this early intervention may preclude any further treatment. Under no circumstances were any addicts admitted to Phase II of the program without participating in Phase I at least once. Patients who have been treated on other existing methadone maintenance programs could be transferred directly to Phase II without having to go through Phase I.

Phase I occurred within a closed psychiatric unit. Phase I was an inpatient program existing within Windsor Western Hospital Centre in which the addict was treated with oral doses of methadone. The addict's early stages of treatment insured that a sufficient level of methadone was administered to prevent the onset of the abstinence syndrome from occurring. After the patient was stabilized on methadone, his dosage was systematically decreased until he was without any physiologic dependencies.

Other drugs are occasionally administered to help the addict cope with anxiety, restlessness, depression, and insomnia. The addict was permitted no visitors other than

his immediate family and interested professionals working with him.

Phase II represented the methadone maintenance program. The Windsor program dispensed oral doses of methadone daily on an outpatient basis. The program itself may be described as a low dosage program. Dosages ranged from 5 mg. to 100 mg. with the average dose ranging between 30 mg. to 50 mg.

The addicts were told at the time of admission into the program that they would be maintained on methadone for no less than six months before formal discharge was possible. Maintenance for at least one year was considered the most desirable treatment plan by the clinic, however, six months stands as the minimum expected requirement for treatment.

Patients maintained on methadone were actively encouraged to attend the voluntary group therapy experience. Those patients requiring individual psychiatric treatment were seen by the clinic director. Periodic readmission to the hospital was available to those presenting sufficient psychiatric symptoms to warrant such psychiatric intervention.

Dosages were increased or decreased during methadone maintenance at the discretion of the clinic director. These decisions were made in consultation with the clinic nurse and the group therapist in regard to the current physiologic, social and psychological conditions of the

patient.

Ordinarily urine samples were taken on a random basis for testing the presence of extraneous drug use by these patients.

II. Rationale for the Study

Having described the methadone program at Windsor Western Hospital Centre, the researchers have several reasons for having selected the program and its participants for examination.

Those reasons were:

1) The program offered the only specialized form of treatment for Canadian heroin addicts in the counties of Essex, Kent and Lambton.

2) Canadian programs in general were few in number and relatively new in relation to their American counterparts. The researchers found that most of the research on methadone maintenance was of American origin. It can be noted in the LeDain report, which specifically investigated the non-medical use of drugs, that in relation to treatment, over 90% of the references to heroin addiction and its treatment were from American studies.[8]

The lack of research generally and specifically of the Windsor program had been recognized by the clinic director, Dr. Walter Cassidy, the hospital administration, the research committee within the hospital, and the group

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[8]A Report of the Commission, Treatment, pp. 105-107.

therapist from the Addiction Research Foundation. After the researchers compiled the research proposal, the aforementioned individuals and organizations collectively agreed to the necessity of such a study.

3) Until 1974 there had been no systematic collection of data on the population or the effectiveness of the program. Consequently, the study sought to provide preliminary data on the methadone patient population. The researchers believed that the initial investigation, although its scope was limited, provided a necessary basis for a beginning understanding of the Windsor Western Hospital Centre's program and research population.

According to Tripodi, et al., in The Assessment of Social Research, such a study would be considered a program-evaluation study.[9]

III. A Description of the City of Windsor

Windsor, Ontario, with a city population of 203,000 and a metropolitan population of 265,000, has an ideal geographical location for industrial, agricultural, social and cultural growth.

Situated on the Detroit River across from Detroit, Michigan on part of the St. Lawrence-Great Lakes System, it was the largest Canadian-American border city. Vessels

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[9] Tony Tripodi, Phillip Fellin and Henry Meyer, The Assessment of Social Research (Itasca, Illinois: F. E. Peacock Publishers, Inc., 1969), pp. 42-43.

carrying finished products and raw material to other parts of Canada or United States and to markets throughout the world pass Windsor's doorstep.

Exchange between United States and Canada was also enhanced by the presence of the Ambassador Bridge, the International Tunnel, and railway tunnels and barges spanning the Detroit River. Windsor was served by five major railways: Canadian National, Canadian Pacific, Chesapeake and Ohio, Norfolk and Western, Pennsylvania Central and a local switching railway. As well, Windsor Airport scheduled air freight and passenger service both nationally and internationally.

Enjoying the advantages of these varied and far-reaching transportation services, Windsor developed into one of Canada's leading metropolitan centres in terms of productivity of manufacturing. The total manufacturing output for 1972 was estimated to be two billion dollars. The dominant industries in the area included motor vehicles and parts - 65%, food and beverages - 13%, and metal and machinery - 12%.

The rapid expansion of Windsor's manufacturing base in recent years has been largely a result of the Canada-United States Automotive Trade Agreement. Located just across the river from the 'Motor City', Detroit, it was well-known that the city of Windsor depended heavily on Detroit and the United States as a whole for its economic stability and productivity.

Of interest in the fields of study of the social scientists is the fact that Windsor has taken a leading role in implementing innovative social services for the community. In keeping with this mentality, the Methadone Maintenance Program at Windsor Western Hospital was one of the very few and one of the first to be opened in Canada.[10]

[10] Windsor Chamber of Commerce, "Windsor - Canada's Ambassador City," Windsor, 1973, pp. 2-6 (mimeographed).

CHAPTER II

REVIEW OF LITERATURE

1. Historical View of Heroin Addiction

Historically, opiate addiction has been viewed in the sociolegal context as immoral behaviour. The addict has been traditionally considered to be an individual who has many of the following characteristics. Prominent among the stereotypic beliefs is the myth of the 'dope peddlar' handing out free samples of drugs to unsuspecting, innocent children.[11]

The Presidential Crime Commission in the United States has noted that:

> there is no evidence from any study of initiation as a consequence of aggressive peddling to innocents who are hooked against their will and knowledge....The popular image of the fiendish peddlar seducing the innocent child is wholly false.[12]

It was also noteworthy to mention that an employee of the Ontario Department of Reform Institutions commented that there was no suggestion that unwilling people

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[11] Reginald Whitaker, Drugs and the Law: The Canadian Scene (Toronto: Methuen Publications, 1969), pp. 27-28.

[12] Robert S. De Ropp, Drugs and the Mind (New York: Grove Press, 1957), p. 51.

in any way were coerced into drug addiction.[13] Further, it was believed that all opiate addicts were criminals. While it was true that most addicts have criminal records, there was some suggestion that 75% of these addicts with criminal records in fact became addicts after a pattern of criminal behaviour was already recognized.[14]

Many believe that the opiate addict was a drug-crazed criminal capable of committing horrendous crimes against persons. Again, there was evidence to the contrary. In Chicago, the frequency of arrests of addicts for violent crimes against people such as rape and murder was less than that of the general population.[15]

Addicts were often believed to be sex maniacs, laciviously lurking in the dark shadows desirous of sexually forcing themselves onto unsuspecting victims. In fact, testimony from medical doctors and addicts themselves indicated that, contrary to this belief, opiates depressed the libido of most users.[16]

It was commonly assumed that opiate addiction eventually destroys the mental and physiologic processes.

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[13]Frank Potts, "Drug Addiction in Ontario," Canadian Journal of Corrections, Vol. I, April, 1958, 40-46.

[14]Ibid.

[15]H. Finestone, "Narcotics and Criminality," Law and Contemporary Problems, XXII (Winter, 1957), 71.

[16]Edwin M. Schur, Narcotic Addiction in Britain and America (Bloomington, Indiana: University Press, 1962), p. 23.

Winick suggested that opiate addiction caused little or no "permanent changes in the brain or central nervous system, or that it causes any changes except the body's greater tolerance of the drug."[17]

Marie Nyswander believed that many addicts under the influence of opiates are more normal in their behaviour than in a drug free state.[18] In testimony given before the United States Senate Committee, Dr. Lawrence Kolb described addicts whom he had treated, including physicians. While the patients were in addictive state, he reported, they were considered to be functioning adequately in a work setting. After being withdrawn from opiate use, they "became hopelessly inadequate...."[19]

Given an adequate supply of the drug, an addict has the potential for being productive as a citizen in his society. Physical degeneration due to opiate addiction has not stood up to the scrutiny when evaluated by Winick.

In addition to the major myths that have been outlined above, opiate addiction was not a recent phenomena. Historically, although opiate addiction in the United States

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[17]Charles Winick, "Narcotics Addiction and Its Treatment," Law and Contemporary Problems, XXII (Winter, 1957), 13.

[18]Marie Nyswander, The Drug Addict as a Patient (New York: Grune and Stratton, 1956), p. 61.

[19]De Ropp, Drugs and the Mind, pp. 148-149.

and Canada existed, it was not considered to be a major problem within the sociolegal framework.

One author has said that the history of opiate use in United States can be divided into three phases. The first phase includes the period prior to the enforcement of the Harrison Act of 1914. The second phase includes the years from 1914 to the mid 1960's. The final phase includes the recent past to the present day.[20]

In regard to the first phase, the Civil War has often been used as a point of departure by historians when recording opiate use in the United States. Although opiates were available in the early nineteenth century, it was not until Alexander Wood invented the hypodermic needle in 1863 that opiate addiction became widespread. After the war was over, many soldiers returned to civilian life with a physiological addiction to morphine. Opiate addiction was commonly known as soldiers' disease.[21] In the late eighteen hundreds, there were between 400,000 and 1,500,000 morphine addicts in the United States.[22] Morphine addicts constituted about 4% of the population.

Opium was readily available to the population from their medical doctors, and in pharmacies throughout the

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[20]Raymond M. Glasscote, et al., The Treatment of Drug Abuse (Washington, D. C.: The Joint Information Service, 1972), p. 14.

[21]Ibid.

[22]Whitaker, Drugs and the Law, p. 14.

country. Many of the patent medicines given to children in the eighteen hundreds contained opium.[23]

During the late eighteen hundreds, medical knowledge of the general practitioner did not encompass the fundamental diagnostic and treatment acumen necessary to advise their patients of the consequences of morphine use. Morphine was considered to be a miracle drug that combatted pain and other presenting symptoms. While there was some appreciation of the addictive quality, opiate addiction per se was considered to be a misfortune rather than a disease. When the addictive nature of the drug became more apparent, thousands of individuals from all social strata were identified as having an acceptable medical problem.

The community's response to the identified problem was to offer remedies and cures available through the local drug stores. The drug store cures would be placed on the same shelf as medication for arthritis, alcoholism and baldness.[24]

In fact, the American Psychiatric Association has stated:

> projections from surveys made even as far back as the 1870's and 1880's suggest that the number of regular users of opiates during that period approached or exceeded the estimated number in the mid 1960's; since the population was then only about one quarter of what it was in 1965, narcotic users as a percent of the general population were several times greater then.[25]

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[23] Ibid.

[24] Glasscote, The Treatment of Drug Abuse, p. 14.

[25] Ibid., pp. 14-15.

In summary, these individuals were diseased by community standards and not believed to be morally weak or degenerate individuals who were desirous of only immediate pleasure. Addiction was seen rather as an unfortunate difficulty that medical treatment legitimately could be employed to cure.

In Canada, the original legislation of narcotic laws was designed by Mackenzie King in 1907. At that time, King was Deputy Minister of Labour and was appointed as a royal commissioner charged with the responsibility to investigate the Oriental riots in Vancouver. By accident, King stumbled across the opium manufacturers in that city. The result of King's assignment was a report entitled, "On the Need for Suppression of the Opium Traffic in Canada." The report laid the foundation for the Opium and Drug Act of 1908 which outlawed the sales of opium in Canada.[26]

The American counterpart of the above Canadian legislation was enacted by Congress in 1909. The law was entitled, "An Act to Prohibit the Importation and Use of Opium for other than Medicinal Purposes."[27]

In 1912 many countries including the United States and Canada signed an agreement to control the sale, use,

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[26]Whitaker, Drugs and the Law, p. 40.

[27]Leon Brill, "Introductory Overview - Historical Background," in Methadone: Experiences and Issues. Ed. by Carl Chambers and Leon Brill (New York: Behavioral Publications, 1973), 6.

production, and transfer of opiates. The 1912 conference was known as the Hague Opium Convention.[28]

The Harrison Act in the United States, required the registration of all legal drug distributors and provided for the payment of a tax for drug transactions. Taxation provisions created a system for controlling all legitimate drug transfers.

Lawrence Kolb reported in The Nation that, "this well intentioned law was misinterpreted from the beginning and made a tool for the persecution of suffering patients and of the physicians who tried to help them."[29]

According to Reginald Whitaker, the Harrison Act was strengthened by numerous court decisions and judicial interpretations, thus the Act has had the unfortunate affect of separating the addict from the doctor.[30]

In the House of Common debates of 1920, N. W. Rowell, the Minister responsible for a number of amendments to the 1908 legislation, argued persuasively for stronger drug laws using the Harrison Act as an ideal model for argument.[31]

In 1961 by joint effort of the Ministries of Justice

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[28]Schur, Narcotic Addiction, p. 46.

[29]Lawrence Kolb, "Drug Addiction: Crime or Disease," The Nation, (May 20, 1961), 441.

[30]Whitaker, Drugs and the Law, p. 41.

[31]House of Commons, Debates (1920), p. 1630.

and Health and Welfare, the Narcotic Control Act was introduced. Because of the representation of the two ministries the Narcotic Control Act had two major dimensions. On the one hand the legislation provided for stern punishment through the judicial system, but on the other hand, Canada recognized addiction as a medical problem.

While the Narcotic Control Act of 1961 had many similarities with the Harrison Act, Canada boldly separated with its powerful North American neighbour on the issue of treatment of heroin addiction.[32] In Canada, the Narcotic Control Act was a progressive legislation, the Act raised serious issues of individual liberty. No other act in Canada considered a defendent guilty until he proved himself innocent. The defendent was given the responsibility to prepare a case for the presentation of information proving his innocence. In a sense, he became prosecutor for his defense. During debate on the Act, Mr. Paul Martin suggested that the burden-of-proof provisions were contrary to the Bill of Rights.[33]

After the passage of the Harrison Act there were several significant rulings made by courts with regard to the dispension of opiates by members of the medical profession.

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[32] Whitaker, Drugs and the Law, p. 42.

[33] House of Commons, Debates (1961), pp. 5938-5958 and 6218-6219.

In 1919 the Supreme Court case of Webb vs. United States acted as a precedent for the 1922 ruling declaring that regardless of the doctor's purpose, prescription of opiates were illegal for any patient. The Supreme Court later realized that they had encroached on the rights of the medical practitioner to treat his patients in an ethical and medically therapeutic manner.[34] Subsequently the Linder decision of 1925 stated that the Harrison Act did not describe methods for the medical treatment of addicts. By 1926 the Supreme Court had made the interpretation that a licensed medical practitioner dispensing drugs in good medical practice could not be accused of violating the Harrison Act.[35] The Supreme Court decision of 1926 has essentially acted as forerunner to present day legislation concerning the treatment of addicts in the United States.

As stated by the 1965 Committee on Public Health of the New York Academy of Medicine, drug addiction was a medical problem requiring medical supervision. The report noted that because of the high recidivism after treatment, narcotics ought to be dispensed to selected subjects within supervised medical settings. The indiscriminate dispensing to addicts without regard to amounts of dosage used and amount of dosages in the personal possession of an addict

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[34] Brill, "Introductory Overview," p. 8.

[35] Ibid., p. 10.

was thoroughly condemned.[36]

After 1965, narcotics responsibly dispensed for the maintenance, systematic withdrawal, and crisis use with the addict and non-addict population was considered to be within the scope of legitimate medical practice.

By the mid 1960's United States and Canada had legislatively enabled addicts to receive treatment without fear of legal reprisals against the patient or his doctor.

There seemed to have been few reasons to treat addiction as abnormal behaviour prior to the enactment of the Harrison Act. Even though the use of opiates was a relatively common phenomenon, it was still considered to be a social problem, upsetting the policy makers and medical profession.

Those interested in narcotic addiction have continuously advocated through debate many reasons, opinions and justifications for the acceptance of their solutions to the narcotic problem.

In the classic work on the opiates entitled The Opium Problem, published in 1928, Pellens and Terry stated after reviewing evidence of addiction that there were some six thousand items to be evaluated.[37]

Despite the prodigious amounts of literature

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[36]New York Academy of Medicine, Committee on Public Health, Subcommittee on Drug Addiction, Report on Drug Addiction (1965).

[37]Charles Terry and Mildred Pellens, The Opium Problem (Montclair, N. J.: Patterson Smith, 1970), p. XIX.

generated before and after 1928, the words of A. Gordon in 1917 perhaps sum up the difficulty the legislators have experienced in designing practical laws in the addiction field. He commented:

> ...a legislated act is concerned with a matter of medical or other biological principles legislators can see only the purely utilitarian side of certain medical questions. When, however, biological principles and principles of a psychological order are to be considered, legislative acts are frequently found to be inapplicable and inadequate because of the failure to consider the psychophysical operations of the individual.[38]

II. Theories of Heroin Addiction

As much as the legislators have experienced difficulty in arriving at equitable narcotic laws, so have social scientists deliberated over an adequate theory of addiction. The attempts to explain narcotic addiction by these scientists may be systematized in the following ways with the model theories being: physiological, psychological, and sociological. Not all theories fit neatly into these three categories; however, for purposes of this study the researchers assigned them to one of the three categories mentioned above. Categorization of theories was not a difficult task since the theories studied more easily fit into one of these categories than another, yet the author of the theory may not have explicitly classified his approach in terms of a physiological, psychological or sociological

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[38] A. Gordon, "The Relation of Legislative Acts to the Problem of Drug Addiction," Virginia Medical Semi-Monthly, XXII (1917-1918), pp. 57-59.

system.

A. Physiological Theory

In the early 1960's Vincent Dole and Marie Nyswander conducted studies of heroin addicts in New York City. The outcome of these studies resulted in a novel approach to the treatment of heroin addiction.

In the past, opiates had been dispensed by private physicians in the treatment of addictions. Drs. Dole and Nyswander introduced methadone hydrochloride as an alternative to supplying opiates in heroin treatment.[39]

It was the contention of these researchers that prior physiological factors played an important role in the initial and sustained use of heroin. The physiological factor had been described as a metabolic deficiency somewhat analogous to insulin and diabetes. It was hypothesized that replacement of the drug satisfying this deficiency would enable the addict to function normally.

Carl Chambers and Leon Brill maintained that the metabolic deficiency hypothesis has not been adequately explained and supported through empirical research.[40] Despite the fact that this hypothesis has never been confirmed, the theory has played a crucial role in the ex-

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[39]Dole and Nyswander, "Medical Treatment," pp. 80-84.

[40]Carl Chambers and Leon Brill, "Summary and Conclusions," in Methadone Experiences and Issues. Ed. by Carl Chambers and Leon Brill (New York: Behavioral Publications, 1973), 350-351.

plaining of heroin-addiction.

Another featured physiologic explanation of the Dole-Nyswander model is that methadone occupies receptor sites of the central nervous system thus preventing any opiates from reaching these sites. Narcotic blockade thus prohibits heroin craving in the addict. Many addicts may have challenged the effectiveness of their methadone treatment by experimenting with illicit opiates to test the narcotic blockade effect of methadone.

Another dimension of the physiological theory includes the principle that permanent derangement could occur after the first addiction cycle. S. R. Goldberg reported in a study of morphine addiction in monkeys that after these monkeys were detoxified for many months and then introduced to narcotic antagonists (drugs that produce withdrawal in drug dependent organisms) they experienced acute withdrawal syndrome.[41] This was a noteworthy finding since it indicated that organisms previously addicted could have persistent reactions to the narcotic antagonist even though the organism was drug free for an extended period of time.

For human subjects, W. R. Martin and D. R. Jasinski have reported similar findings of ex-morphine addicts.[42]

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[41] S. R. Goldberg and C. R. Schuster, "Conditioned Nalorphine-Induced Abstinence Changes: Persistence in Post Morphine-Dependent Monkeys," Journal of Experimental Animal Behaviour, XIV (1970), 33-46.

[42] W. R. Martin and D. R. Jasinski, "Physiological Parameters of Morphine Dependence in Man-tolerance early abstinence, protracted abstinence," Journal of Psychiatric Research, VII (1969), 9-17.

These findings lent considerable credibility to the metabolic theory of Dole and Nyswander.

One of the shortcomings of the theory is that it fails to explain how millions of hospitalized patients have been treated with opiates for medical reasons and yet only a small fraction of these patients have become tolerant to the drug and dependent on it during medical treatment.

It could have been assumed that most hospitalized patients received opiates through subcutaneous injections rather than intravenous administration; therefore, the severity of the addict's drug dependency was not as profound. Despite the argument of subcutaneous injections, it is still difficult to accept totally the biological need theory due to the fact that many ex-addicts have remained drug free through the abstinence programs such as Synanon and Daytop. Many of these individuals reported that they no longer have narcotic hunger. There may be some additional support for the biological theory in research conducted at Harvard University. In that university's sample from the general population, 90% of the experimental subjects experienced dysphoria, dizziness, nausea, headaches and other generally unwelcome symptoms.[43] The remaining 10% experienced a pleasurable sensation when given opiates for the first time.

In another experiment, one hundred and fifty young non-addicts were given doses of morphine and on the basis of the subjective reports of this group, the opiates were

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[43]Whitaker, Drugs and the Law, p. 15.

not inherently euphoric or attractive. As in the other study, there were some subjects who responded favourably to the injections and would voluntarily allow another dose to be administered.[44] These findings supported the idea that there may be a percentage of the population in which there was a potential predisposition to addiction in the first experience with the drug. While the predisposition has not been conclusively shown to be true, it has been documented that there are persistent abnormalities that can be measured in former addicts after having experienced opiate addiction for a prolonged period of time. Body temperature, blood pressure, and sensitivity of the "respiratory centre to carbon dioxide do not quite return to the pre-addiction baseline."[45]

Goldstein concluded that an addict in a tolerant dependent state was definitely suffering from a metabolic disease, namely, that a manifestation of biochemical and physiological conditions will become apparent if the drug was discontinued.[46] Although the metabolic theory has not been able to explain adequately the phenomenon of heroin addiction, it has provided the framework for methadone

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[44] Isador Chein, et al., The Road to H: Narcotics, Delinquency, and Social Policy (New York: Basic Books, 1964), p. 348.

[45] A. Goldstein, "Heroin Addiction and the Role of Methadone in its Treatment," Archives of General Psychiatry, XXVI (April, 1972), 293.

[46] Ibid., 293-294.

maintenance treatment programs which have measurable success in blocking illicit heroin use and facilitating social rehabilitation of the addict.[47]

B. Psychological Theory

The literature indicates that there was a variety of addicts rather than simply the addictive personality type. Traditionally the drug dependent person has been viewed as an individual with weak ego structure, poor impulse control, fear of pain, defective superego, inadequte sexual identification, fear of success and responsibility, avoidance of stress, anxiety and depression, and aggressive tendencies.[48]

Otto Fenichel stated that opiate addicts have a predisposition to act out the effects of these drugs in a rather specific manner. The opiates satisfy archaic sexual difficulties, needs for security and self esteem. He added that the chemical effect of the drug is only one dimension to addiction; that the psychological structure of the person must be understood as well. For the user, the drug is expected to fulfill primitive desires. Drug pleasure makes genital sexuality very uninteresting for the addict. The effects of the drug cause fixation of a passive narcissistic nature solely for their own gratification.

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[47]F. R. Gearing, "Successes and Failures in Methadone Maintenance Treatment of Heroin Addiction in New York City," Proceedings of the Third National Conference on Methadone Treatment (Washington, D. C.: Government Printing Office, 1970), 2-16.

[48]Leon Brill, "Addiction: Drug," Encyclopedia of Social Work, 16th ed., I, 26.

Symbolically the drug represents food and warmth and when the drug is not routinely administered these individuals become intolerant of pain, frustration and tension.[49]

Marie Nyswander has speculated that an inability to acknowledge his aggressive impulses and express aggression are the addict's core problem and he uses drugs to submerge hostility.[50] Howe's overview of addiction has further enlarged on this belief.[51] It was his contention that as a result of early life experiences in the home, the addict has learned to inhibit his unacceptable impulses or his 'bad self,' to the degree that they are often blocked from consciousness. At a later date, the individual begins to suffer from tension, anxiety, depression, guilt, loneliness, shame, inadequacy, inferiority or worthlessness.

Use of opiates leads to addiction because they act to dampen sexual and aggressive impulses which the individual has learned to regard as normally wrong or bad and also to fear as dangerous because expressing them may lead to their getting out of control with devastating consequences. In some, the moral stress to be good and live up

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[49] Otto Fenichel, The Psychoanalytic Theory of Neurosis (New York: W. W. Norton and Company Inc., 1945), 376-378.

[50] R. Ganger and G. Shugart, "The Heroin Addict's Pseudoassertive Behaviour and Family Dynamics," Social Casework, XLVIII (October, 1966), 643.

[51] L. P. Howe, "Methadone and Morality: Toward a Sociology of Addiction," Proceedings of the Fifth National Conference on Methadone Treatment (New York: National Association for the Prevention of Addiction to Narcotics, 1973), 586-595.

to expectations coupled with a fear of being bad acts as a force mobilizing addictive cravings which leads to reduction in strength of these drives and in turn a reduction in anxiety and fears.

Chein, et al., maintained in their New York study that all their young addicts suffered from deep-seated, serious, psychological problems. While they noted no single type of psychopathology, overt and incipient schizophrenia, delinquent behaviour and inadequate personalities were the main findings.[52]

Wikler has a theory of addiction based on operant and classical conditioning. By this, Wikler meant that addiction and relapse are the results of a positively reinforced experience with heroin. Wikler suggested that with dependence, a continuous cycle of narcotic hunger and subsequent gratification of that hunger evokes such behaviour as do many of the other primary needs of hunger and thirst. Wikler did not believe that the desire for a euphoric state was the only motivation for continued narcotic use and relapse. Instead, he favoured the position that drug addiction is learned behaviour classified as operant and classical conditioning. Dependency, he felt, could provide a motivational basis for obtaining drugs and belonging to a deviant subculture.

After a period of dependency, continued drug use alleviates any anxiety or depression caused by the abstin-

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[52]Chein, Road to H., pp. 192-226.

ence of the drug thus the opiate acted as a positive reinforcer in reducing tension and further reinforcing those operations necessary to obtain an illicit supply of heroin. In a sense, the addict has been classically conditioned to associate a geographical area, a set of particular friends, and a particular type of physiological and emotional condition with drug seeking behaviour. The coupling of the above variables become a conditioned stimulus eliciting sustained narcotic use.

In the treatment of heroin addiction by this approach, the physical dependence upon an opiate becomes only a segment of the entire problem. The operants that have been conditioned represent strongly learned behavioural operations that must be considered in addition to a purely physiological explanation of the etiology of heroin addiction.[53]

One of the difficulties of the psychological theories of drug addiction were that they failed to develop a theory of addiction that was both specific and consistent in its explanation of the motivation aspects for sustained drug use.

Lawrence Kolb concluded in one study that 86% of those addicts that he studied had been suffering from several forms of nervous instability before becoming addicted. The difficulty of psychological explanations

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[53] A. Wikler, "Some Implications of Conditioning Theory for Problems of Drug Abuse," Behavioral Science, XVI (1971), 92-97.

may be demonstrated by the finding that the remaining 14% of this population were found to be normal.[54]

Lindesmith has noted that in the United States psychologists:

> actually studied addicts only after addiction - and in many cases after many years of addiction....They do not tell us how those traits which were the result of addiction were separated from those that were causes of addiction.[55]

C. Sociological Theory

As noted in the historical pattern, drug abuse sixty years ago was a problem of the middle aged, white, protestant, rural, middle class.[56] Recently, however, drug use has become primarily a lower class, minority group, urban phenomenon.

Isador Chein studied narcotic addicts and discovered that only 15% of the census tracts in New York contained 80% of the young people involved in drug use. While his study pointed to many psychological explanations for this phenomenon, there are some sociological implications as well. These geographical areas were highly depressed economically.[57]

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[54]Schur, Narcotic Addiction, pp. 36-37.

[55]A. Lindesmith, "The Drug Addict as Psychopath," American Sociological Review, V (1940), 916.

[56]Brill, Encyclopedia of Social Work, p. 25.

[57]Ibid.

Chein intermingled both the psychological factors and sociological factors concerning the life styles of those addicts. As Chein has focused on the different life styles of addicts, a theory of differential association emphasizes the role played by addicts which determined their motives and attitudes towards society whether they be legitimate or deviant. There were learning factors involved in the life cycle theory developed by Chein. These addicts, according to Chein, often play a role dictated by a negative self image and associations with a deviant subculture.

C. Volkman and D. R. Cressy have been able to demonstrate that an organization such as Synanon has been able to extinguish the deviant role behaviour of its addicts.[58]

Robert Merton submitted that when individuals are unable to achieve the legitimate goals that society values, they retreat from these values and substitute deviant activities.[59] Cloward has further developed Merton's retreatist theory asserting that when members of the lower class discover that their aspirations to middle class goals will not be met they are unable to alter powerfully their circumstances through criminality or confrontation. When

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[58] C. Volkman and D. R. Cressy, "Differential Association and the Rehabilitation of Drug Addicts," American Journal of Sociology, LXIX (September, 1963), 129-142.

[59] R. S. Weppner, "An Anthropological View of the Street Addict's World," Human Organization, XXXII (Summer, 1973), 114.

neither violence nor criminality achieves expected goals then these individuals retreat to drug use.[60]

Social conditioning theory was purported to play an important role in narcotic abuse and addiction. Preble and Casey, in studying the life of the heroin user, advocated that the addict may find many social rewards for successful hustling.[61] Preble further advocated that "the life of the narcotic addict may be quite meaningful to the addict despite the fact that it is a socially disapproved deviant behaviour."[62] The meaning of the addict's life laid in the gratification of accomplishing a series of challenging, exciting tasks every day of the week.

Agar maintained that the addict role makes for cohesive ingroup relations. Not only do these individuals share risks in the purchase and use of the narcotic, they develop a set of common interests whereby they become 'better' than non-users.[63]

Merton's and Cloward's contention that individuals who cannot compete in the existing system of middle class

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[60]R. Cloward, "Illegitimate Means Anomie and Deviant Behavior," American Sociological Review, XXIV (April, 1959), 164-176.

[61]E. Preble and J. J. Casey, "Taking Care of Business - The Heroin User's Life on the Street," International Journal of Addictions, IV (1969), 1-24.

[62]Weppner, "An Anthropological View," 114.

[63]M. Agar, "The Folklore of the Heroin Addict: Two Examples," Journal of American Folklore, LXXXIV (1971), 175-185.

values retreat into an attainable system of their own values, beliefs and attitudes.

From reviewing the literature, it appeared that middle class values may be accepted by the larger society, so the ethnocentricity of the deviant culture may be as tenacious and meaningful to members of that group.

III. Modalities of Treatment for Heroin Addiction

In response to the diverse explanations of heroin addiction, social scientists have created the model theories described in the foregoing section of the review of the literature.

In turn, many of these researchers have responded by developing specific treatment interventions addressing themselves to heroin addiction. In addition to the professional treatment community, namely doctors, psychologists, sociologists, social workers and nurses, the state has attempted to deal with heroin addiction through legal channels. The primary focus has been on punishment rather than rehabilitation. Oakalla was an example of a Canadian penal institution where many drug users have been incarcerated and little or no attempt has been directed toward treatment.[64] Private responses to heroin addiction were apparent in the form of therapeutic communities such as

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[64] R. Solomon, "Oakalla Complex," (Unpublished Commission Research Paper, May 7, 1971).

Synanon, Daytop and X-Kalay. Besides these communities some religious groups such as Teen Challenge, Exodus House, and the Patrician Movement have addressed themselves to the problem of heroin addiction.

Of the various programs responding to the need for treatment of opiate addiction, the researchers have isolated six major approaches found in the literature. Those approaches were: 1) Civil Commitment, 2) Religious experience, 3) Mutual Help in Therapeutic Communities, 4) Narcotic antagonist, 5) Heroin maintenance (exemplified in the British System), and 6) Methadone maintenance.

A. Civil Commitment

Civil commitment, while essentially a voluntary program, has the authority to detain an addict for treatment after he has willingly placed himself into these institutions.[65] Civil commitment limited the freedom of the individual addict more or less on a time-limited basis. The civil commitment process also included a general judicial review as a necessary safeguard for the rights of those treated under this system and for society as well. In the struggle for abstinence, some addicts voluntarily have placed themselves into confinement for treatment. Civil commitment may be considered as treatment under confinement.

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[65] J. F. Maddux, "Current Approaches to the Treatment of Narcotic Addiction," Journal of the National Medical Association, LXI (May, 1969), 250.

The confinement of the addict occurred by two avenues. The first, as mentioned previously, was the voluntary commitment of the addict for treatment. The second occurred when the State decided that, in the best interest of the addicted individual, that 1) he be committed for treatment of his drug dependency, 2) as an alternative to being sentenced for a crime committed the individual can choose treatment over incarceration.

In the United States the Narcotic Addict Rehabilitation Act (N.A.R.A.) of 1966 was very important Federal legislation. The development of commitment programs under this Act came about as a result of the failure of institutional treatment at the Federal hospital at Lexington and Fort Worth.[66]

In addition to this Act, the Supreme Court in Robinson vs. California held that it was unconstitutional to punish a person because he was addicted.

Under the American system both the addict and a person eminently in danger of becoming addicted was eligible for civil commitment. The commitment itself arose in three basic ways: 1) the addicts themselves, a relative or a third person petition for commitment, 2) during the criminal process, treatment can be sought in lieu of prosecution, 3) if the criminal process results in prosecution, commitment may be a viable alternative to imprisonment and

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[66]Report of the Commission, Treatment, p. 13.

penalty.[67]

In the United States and Canada through similar legislation of the Narcotic Control Act of 1961 and the Narcotic Addict Rehabilitation Act of 1966, an addict had the opportunity to be treated rather than punished. In Canada, the addict must have been charged with a criminal offense before the courts had any jurisdiction whatsoever in the compulsory commitment to treatment of addiction.[68] In the United States it has been constitutionally permissible to impose treatment on anyone who was found to be addicted.[69] While these individuals could no longer be charged after the decision of the United States Supreme Court, they could be civilly committed against their will.

Civil commitment programs usually confined a person for treatment within the facilities for a predetermined period of time. The time period could be fixed or flexible, contingent upon the authority of those having custody. The addicts were released on an outpatient basis after they have been drug free and if their behaviour warrants such trust.

Any inappropriate acts as defined by the centre were considered as violations of probation and the individual was returned to confinement or the court to have his

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[67]Ibid.

[68]Whitaker, Drugs and the Law, p. 43.

[69]Report of the Commission, Treatment, pp. 13-15.

status re-evaluated.

There were some safeguards for the addict in the civil commitment system. Usually it has been found that a system of justification for compulsory treatment of an addict must arrive at this decision through an adversary process. The adversary process included that: 1) the addict have full notice of his hearing, 2) he understand the nature of his commitment and treatment, 3) right of cross examination, 4) legal counsel, 5) right to a jury and judicial review.[70]

In summary, the voluntary basis for treatment became compulsory once the addict has placed himself in custody. If the courts decided he needed treatment he may or may not have had the choice to decide between treatment and incarceration.

In one follow-up study conducted by Langenauer and Bowden, they concluded that the civil commitment programs such as exist through the N.A.R.A. yielded unsuccessful results. They further noted that eight months after treatment, 42% had been recommitted for treatment.[71]

B. Religious Experience

Another attempt to deal with opiate addiction has

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[70] Ibid.

[71] B. J. Langenauer and C. L. Bowden, "A Follow-up Study of Narcotic Addicts in the N.A.R.A. Program," American Journal of Psychiatry, CXVIII (1971), 71-78.

been through religious programs and services for the addict population. Such affiliation often renewed religious faith of those seeking help. Some of these programs offered a wide range of services including medical, counselling and vocational services to the clientele. Religious programs were not explicitly sacred in nature, but provided services to the obvious needs of this population. The services were funded by organized religious groups. The emphasis of their programs was on providing direct psychological and material help as opposed to religious conversion.

Another dimension of the religious response to heroin addiction was the development of a movement of evangelistic crusaders who aggressively sought to convert addicts to useful members of a society. Conversion was made through the intense religious experience of baptism of the holy spirit. The workers of the religious approach preached to their clients on street corners in an attempt to reach delinquent and addicted youths. One example of the religious approach was through the Teen Challenge founded in 1958 in New York City by the Reverend David Wilkerson.[72]

C. Mutual Help through Therapeutic Communities

The therapeutic community concept existed in several different forms for many years. As far back as 1950 group therapy was an essential ingredient in most treatment programs to help the addict.[73]

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[72]Maddux, "Current Approaches," 252-253.

[73]Ibid., 251.

The group therapy sessions themselves often employed ex-addicts as counsellors in the group treatment approach. The mutual effort later became expanded into the concepts of self-government and other sociotherapeutic activities.

In 1948, addicts at the Lexington Centre developed a mutual help program patterned after the Alcoholics Anonymous which became known as Addicts Anonymous. Following the Lexington experience, a similar group was set up at Fort Worth Centre in 1954.[74] In 1966, a Narcotics Anonymous group was founded in San Antonio.

One of the most familiar mutual help organizations for narcotic addicts was Synanon Foundation. Synanon was founded by Mr. Charles E. Dederich in 1958 at Santa Monica, California.[75] Synanon has served as a model for many other programs. The foundation has grown into a large formal organization. They report having over eight hundred residents in the facilities. Residential facilities existed in Santa Monica, Detroit, San Diego, San Francisco, New York and Tomales Bay, California.[76]

The following characteristics may describe the mutual help therapeutic communities.

These communities:

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[74] Ibid.

[75] Lewis Yablonsky, Synanon: The Tunnel Back (Baltimore: Penguin Books Inc., 1965), p. vii.

[76] Maddux, "Current Approaches," 252.

1) demanded a total drug free state

2) emphasized the 'here and now' versus 'there and then' approach to problems

3) required that the addict be responsible for his own behaviour and view his past behaviour as stupid rather than sick

4) required participation in intensive group therapy games which confront the addict's behaviour and demand that he change under group pressure

5) relied heavily on ex-addicts to staff the facilities.[77]

Many of these facilities were operated entirely by non-professional staff. Ex-addicts in these communities rejected the use of professional therapists.

Odessey and Phoenix Houses used both traditional and innovative methods in working with their addicts. The goal of all of the programs was to be able to live in a drug free state indefinitely. Some communities insisted that the addict must remain indefinitely with the organization if he was to escape addiction while others attempt to reintegrate the addict back into the community at large. Daytop was an example of a therapeutic community whose goal was to return the addict to society. X-Kaley, a Canadian organization saw the therapeutic community as a life style.[78]

One of the major features of many of the therapeutic communities was 'attack therapy'. Therapy sessions verbally

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[77]Report of the Commission, Treatment, p. 81.

[78]Ibid., 85-87.

attacked the individual for his or her behaviour. He was ridiculed and criticized by his fellow addicts by a system that has been called the 'hot seat'.

Endore has stated that attack therapy was not to be confused with group therapy. He has stated:

> it isn't group therapy at all. It's a game period. It's a contest. It's a sport. It's a vigorous workout for the mind and the emotions. It will strain your brain and your vocal cords...if it's therapeutic, as it most certainly seems to be then its partly for the same reason that any sport is healthful, because it's strenuous enough to stimulate your blood stream, raise your pulse rate, excite your senses and leave you afterward refreshed and pleasantly exhausted.[79]

H. M. Ruitenbeek said one of the most noticeable aspects in the Synanon method of treatment was the insistence in the group encounter sessions of honesty.[80] The emphasis was on the 'here and now' feelings and the prohibition of rationalization and intellectualization.

One independent study of the mutual help therapeutic communities in New York State concluded that the number of addicts who were able to maintain a drug free state was too small to justify the large expenditure.[81]

In general, these organizations have not made systematic investigations into the effectiveness of their

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[79] Ibid., 82.

[80] Ibid.

[81] Policy Concerning Drug Abuse in New York State, Hudson Institute (Croton-On-Hudson, N. Y.: 1970).

treatment modality. Little has been done on program evaluation and centralized record keeping because many of these agencies have been relatively closed to the public. Studies involving classical experimental designs have not been utilized. These programs also have had a limited appeal to the addict population at large.

One author has suggested that some individuals who have received treatment at these communities have become excessively dependent on the program while subsiding in their abuse of an opiate.[82]

D. Narcotic Antagonists

Another treatment effort has been a chemotherapeutic approach to addiction. Narcotic antagonists provided one chemical approach to treatment. It is believed that this group of drugs competes for and are selected by the receptor sites in the specific brain sites on which the opiates operate.[83] Because the antagonists seek these receptor sites they subjectively and physiologically reduce the affects of any opiate introduced to the system. Thus, if the addict was treated with a narcotic antagonist it would become impossible for the individual to become physically addicted to an opiate even though it may be taken regularly.

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[82]Report of the Commission, Treatment, p. 17.

[83]Victoria Wiechert, et al., "Development of a Nursing Regimen for an Antagonist Inmate Work Release Program," Proceedings of the Fifth National Conference on Methadone Treatment (New York, National Association for the Prevention of Addiction to Narcotics, 1973), 411.

Some advantages of narcotic antagonist treatment are:

1) A high percentage could go on to achieve abstinence.

2) There was no street value for the drug since the side effects are dysphoriant rather than euphoriant.

3) It was an alternative for patients who do not want either drug free treatment or methadone maintenance.

4) It was speculated that patients taking narcotic antagonists do better than or as well as those involved in methadone maintenance treatment.

5) A narcotic blockade was achieved without prescribing an addictive substance such as methadone.

Because of the narcotic blockade effect, Wikler has suggested that due to the unique chemical properties of these antagonists they may be used in the treatment of heroin addiction through a behaviour modification framework. Wikler believed that narcotic users have been classically and instrumentally conditioned to respond not only to the positive rewards of the opiate use but also the environment in which they live sets up the necessary conditions for continued abuse.[84] The antagonists break the cycle by eliminating the reward of opiate injection thus negatively reinforcing further drug use and condition the addict aversively to the environment in which this substance was found.

Another phenomenon known as the 'needle freak'

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[84]Brill, Encyclopedia of Social Work, 32.

involves a person who has associated the needle with the euphoric state that accompanies its use. Since the narcotic antagonists severely limit a positively experienced state from opiate use there has been some suggestion that it may break conditioned stimulus between the drug and the syringe.

Of the narcotic antagonists available on the market, the three most common were: 1) naloxone, 2) nalorphine, and 3) cyclazocine.

In the 1973 National Conference on Methadone Treatment, several leading experts in the area of narcotic antagonists have indicated that narcotic antagonists were useful in the treatment of narcotic addiction if used in the context of a total treatment program and that individuals responded positively to treatment when supportive and rehabilitative services were made available.[85]

In an article by Benjamin Kissin, et al., it was found that cyclazocine patients have a greater social stability after treatment than comparable methadone patients. These patients were also younger, had more education and have had less criminal activity.[86]

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[85]"Clinical Experiences with Narcotic Antagonists: Cyclazocine and Naloxone," Proceedings of the Fifth National Conference on Methadone Treatment (New York: National Association for the Prevention of Addiction to Narcotics, 1973), 449-455.

[86]Benjamin Kissin, et al., "Cyclazocine Treatment for Heroin Addicts," Proceedings of the Fifth National Conference on Methadone Treatment (New York: National Association for the Prevention of Addiction to Narcotics, 1973), 664-665.

Narcotic antagonist programs often have had poor retention results; however, those addicts who have stayed in treatment often show considerable improvement in such areas as criminal activity, drug abuse and social behaviour.

One of the disadvantages of the programs was that only well motivated addicts were willing to undergo narcotic antagonist treatment. Narcotic antagonist treatment tended to be less attractive to the heroin population than methadone treatment. There were also some side affects associated with the use of this type of drug, namely that it could induce sensory distortions, illusions, slowing down thought processes, depression and could cause further deterioration of already psychotic patients.

E. Heroin Maintenance

The only countries in which heroin was used for medical purposes were Great Britain, Belgium and France.[87] Of these three countries the largest use of heroin for medicinal purposes was Britain. Unlike the United States and Canada, Britain offered through specially licensed physicians, the privilege of dispensing heroin to heroin addicts. These physicians, however, must have been attached to drug treatment centres.

Heroin was only dispensed to those individuals who voluntarily sought treatment through this modality. If treatment was sought in this particular method, the addict

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[87] Report of the Commission, Treatment, p. 21.

must have registered for this service.[88] Heroin maintenance was an integral part of the British System made possible through an enactment of legislation known as Misuse of Drugs Act 1971.[89]

In Britain, physicians and other treatment staff considered the addict to be a sick person in need of medical and/or psychological treatment. Their philosophy was embodied in the statement, "you're sick people, you're fine people. It is unwise to go on taking drugs forever, and we are never going to escalate the dose, but we'd like to help you."[90]

The addict was not viewed as a criminal and the framework of treatment was not punitive. In Britain the addict could not be forced to receive treatment through civil commitment in the belief that such treatment would not be in his best interests.

The rationale for the British System has been described in detail by P. H. Connell in the British Medical Journal. Some of the salient points were that:

1) if heroin was not prescribed to heroin addicts the legal absence of this drug would create a demand which could not be met through a medical practice thus creating a criminal black market.

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[88]G. Edwards, "The British Approach to the Treatment of Heroin Addiction," Lancet (April 12, 1969), 768-772.

[89]Report of the Commission, Treatment, p. 18.

[90]Nathan Straus, Addicts and Drug Abusers (New York: Twayne Publishers, Inc., 1971), p. 160.

2) heroin addicts were in sufficient number in Great Britain to make it profitable for a criminal organization to be established and supply heroin illicitly.

3) heroin supplied at treatment centres would reduce the need to commit crimes used to buy the drug illicitly.

4) the special centres were strictly controlled through licensing, thus the medical experts were not apt to over-prescribe.

5) the clinics prescribed only enough for the physical needs of their patients and thus limited any excess heroin that potentially was used in experimentation by addicts.

6) the addict was a sick person who came within the parameters of legitimate medical practice; therefore his dependence on the drug was so severe that he could not be expected to function responsibly or rationally without medical help.

7) the addict population became identified to the registration system thereby enabling the government to have a more accurate picture of this population.

8) the addict was more likely to approach a system that promises to dispense to him his drug of choice.[91]

Even though the British System had been largely known as heroin maintenance, it prescribed methadone as an alternative to heroin maintenance and, in fact, encouraged the use of methadone. In 1971 50% of the addict population was receiving methadone rather than heroin.[92]

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[91]P. H. Connell, "Centres for the Treatment of Drug Addiction -- The Importance of Research," British Medical Journal, II (1967), 3-7.

[92]Report of the Commission, Treatment, pp. 19-20.

There were several reasons for this shift in treatment modality. Among them were:

1) heroin was administered intravenously while methadone was taken orally. Heroin taken intravenously required frequent administration because of its shorter action and secondly it produced greater euphoria thus greater impairment.

2) intravenous administration of any substance produced greater danger from complications such as hepetitis, abscesses, and hematomas.[93]

The British addiction policy has allowed the medical and law enforcement personnel to cooperate in attaining socially desirable goals in the treatment of addiction.

The medical practitioner was given professional autonomy in his treatment of heroin addicts. The police and other officials supported autonomy because heroin maintenance has been largely responsible for keeping the country free from criminal organizations.[94]

Even though heroin maintenance has been reasonably successful in dealing with the problem of heroin addiction the current trend in Great Britain was moving slowly toward the availability of methadone as a form of treatment for heroin addiction.

Bewley concluded that, "During the two years after the clinic was started, there was a decrease in the total amount of the heroin prescribed and an increase in the

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[93]Ibid., 19.

[94]Schur, Narcotic Addiction, p. 150.

amount of methadone."[95]

James supported Bewley's position suggesting that the experience of heroin maintenance has "...lead to a reduction in the over prescribing of heroin and have succeeded in weaning a proportion of the narcotic addicts from heroin onto methadone - and nearly all off intravenous stimulant drugs all together."[96]

IV. Methadone Treatment

A. Background of Methadone Treatment for Opiate Addiction

Methadone hydrochloride is a synthetic drug developed during World War II at an industrial complex known as I. G. Farben.[97] It was only after the war that the Technical Industrial Intelligence Committee, which was a branch of the Department of State, studied the Germans' research on methadone. Methadone, a synthetic drug with its strong analgesic properties was later marketed in the United States under the names of Dolophine (after Adolf Hitler), Adanon, Amidore, and Althose.[98] Methadone historically has been used in the United States since 1948

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[95] Report of the Commission, Treatment, p. 19.

[96] I. P. James, "The London Heroin Epidemic of the 1960's," Medico-Legal Journal, XXXIX (1971), 17-26.

[97] Nelkin, Methadone Maintenance, p. 40.

[98] Ibid.

in the detoxification of heroin addicts.[99] Methadone also has been prescribed to those patients in severe pain due to terminal illness and other painful conditions.

The drug has been favoured in the treatment of heroin addicts by medical practitioners because the chemical formula of methadone is exceedingly complex; therefore, its clandestine manufacture has been almost impossible. Since 1948 there have only been two laboratories uncovered producing methadone illicitly.[100]

While methadone has been used since 1948 in the detoxification of addicts it was not until 1963 that Drs. Dole and Nyswander from the Rockefeller Institute and Beth-Israel Medical Centre used methadone experimentally to relieve drug craving in their patients.[101] The two patients selected on an experimental basis were taking such massive doses of heroin as to be euphoric almost continuously. Drs. Dole and Nyswander noted that not only did the heroin hunger subside after methadone administration, but important changes in the behaviour of the patients were also observed.

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[99] Harris Isbell and Victor Vogel, "The Addiction Liability of Methadone (Amidone, Dolophine, 10820) and Its Use in the Treatment of the Morphine Abstinence Syndrome," American Journal of Psychiatry, CV (1949), 909-914.

[100] Nelkin, Methadone Maintenance, p. 40.

[101] Vincent Dole, Marie Nyswander, and Allan Warner, "Successful Treatment of 750 Criminal Addicts," Journal of the American Medical Association, CCVI (1968), 2708-2711.

Within the legal context, prescribing narcotics has been an indictable offense. In 1962 when New York State Medical Society ruled that those physicians who engaged in a controlled and supervised research program for addicts were practising ethical medicine, the groundwork was laid for methadone maintenance.[102] The particular decision reached by the Medical Society was a progressive step in terms of treatment for heroin addiction. The 1962 decision was the first medical ruling since the Harrison Act prohibited the prescription of narcotics.

In early 1965 Drs. Dole and Nyswander treated heroin addicts at the Bernstein and Beth-Israel Centre. In 1967 there were three hundred and fifty addicts in treatment. By March of 1972 it was estimated that there were sixty-five thousand addicts being maintained on methadone throughout the United States.[103]

Since the initial treatment of heroin addiction by methadone, the current modalities include both the system developed in 1948 and the maintenance program introduced by Drs. Dole and Nyswander in the mid sixties.

These modalities may be categorized into two approaches, namely detoxification and maintenance with methadone.

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[102] Nat Hentoff, A Doctor Among the Addicts (New York: Grove Press, 1968), p. 44.

[103] Nelkin, Methadone Maintenance, p. 42.

B. Detoxification: Inpatient and Outpatient

Detoxification is a method of treating heroin addiction whereby an addict is withdrawn from heroin by substituting another addictive drug (methadone) thus allowing momentary stabilization of a dependency problem.[104]

Once stabilized on methadone the addict could be systematically reduced from methadone over a period of time allowing him to achieve psychological and physiological homeostasis. The concept of detoxification may be applied in unique and specific ways to a population of heroin addicts.

To classify these approaches to detoxification, the literature has assigned two basic modes of treatment. They were inpatient detoxification and outpatient or ambulatory detoxification.[105] Both the inpatient and the outpatient approaches may have been of long or short duration. In terms of the approaches available for detoxification, the existing services stated differing emphases in the treatment of heroin addiction. The differences may have been philosophical as well as scientific.

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[104]Raymond Lloyd, et al., "Detoxification: What Makes the Difference?", Proceedings of the Fifth National Conference on Methadone Treatment (New York: National Association for the Prevention of Addiction to Narcotics, 1973), 277.

[105]Leon Brill and Carl Chambers, "A Multimodality to Methadone Treatment of Narcotic Addicts," Social Work, XVI (July, 1971), 40.

The rationale given to justify a particular approach could usually be found within the literature.

Inpatient

Carl Chambers suggested that regardless of the method of detoxification, three essential factors must be evaluated before determining how rapidly an addict can be detoxified. The three criteria were:

1) severity of the addiction,
2) coexistence of other addictive substances, and
3) the general physiological condition of the patient.[106]

Some practitioners advocated that the inpatient detoxification system provided the tightest supervision and isolation possible.

Many doctors have argued that because of the frequency of sociopathic personality disorders there was a necessity for a highly structured treatment program. In addition to these assumptions, the clinician may also view the addict's social environment as sufficiently harmful to his patient, that he believed geographical removal was a necessary condition of detoxification.[107]

As was indicated earlier, severity of the addiction

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[106] C. Chambers, "A Description of Inpatient and Ambulatory Techniques," in Methadone: Experiences and Issues. Ed. by Carl Chambers and Leon Brill (New York: Behavioral Publications, 1973), 186.

[107] Ibid.

was a key factor when considering heroin withdrawal. The self-reports of many addicts were grossly overstated or understated regarding the addict's actual habit. An addict who wished to portray himself as 'a heavy' may boast of years of addiction suggesting considerable quantity of intravenous use of heroin. On the other hand, the long term user of opiates may have been desirous of underplaying the seriousness of his addiction problem because he felt ashamed and guilty. Given the task of accurately measuring the degree of addiction, the practitioner could only guess at the veracity of the self reports of his patients. One could not assume that all patients deliberately lie about their addiction, however, the quality of illicit drugs rendered measurement of quantity of drug used as meaningless.

Those who have argued in favour of inpatient detoxification suggested that a more exact picture of the addict and his problem would be possible through this method. Therefore, more appropriate prescription of methadone could be achieved. After a patient has been screened and admitted for inpatient treatment, the doctor could wait for the abstinence syndrome to manifest itself before prescribing a rather small dose of methadone.

In one centre, it was hospital policy to administer only 5 mg. of methadone to those patients of dubious addiction. Those with large habits were given 15 mg. The chosen average was 10 mg. The dosages could be increased

as needed until the abstinence syndrome no longer manifested itself. After stabilization was achieved, the systematic withdrawal regimen was initiated until the addict reached a drug free state.[108]

Due to additional research information, Chambers discovered in 1969 that 35% of the narcotic addicts studied were also concurrently addicted to barbiturate-sedative drugs. Because of the seriousness of barbiturate addiction doctors argued convincingly that these concurrent addictions required inpatient facilities to institute the most medically sound form of treatment.[109] Withdrawal from barbiturates was potentially life-threatening. The severity of the abstinence syndrome has been documented in the death of a patient who was withdrawn from a 50 mg. habit of barbiturates. The general procedure for detoxification for narcotic addicts from barbiturate addictions has been developed by Isbell and his associates.

Detoxification was rarely seen as the end of treatment of heroin addiction. A 1972 study by the Narcotics Treatment Administration of Washington, D. C. concluded that detoxification was only 3% effective in the treatment of heroin addiction when abstinence was used as the criterion for success during the treatment period.[110]

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[108] Ibid., 186-187.

[109] Ibid., 187-188.

[110] Lloyd, et al., "Detoxification," Proceedings, 275.

There were those who discounted the view that detoxification was only the first step. In an article by Anthony Raynes, et al., they postulated that success can be defined as those individuals who complete the detoxification process.[111] If completion of detoxification was the criterion for success, the inpatient program generally had a high rate of success in terms of retaining the addict for a sufficient period of time whereby he could be in a totally drug free state. Maybe this system of detoxification, while not a long term answer to opiate addiction, could best be summarized by De Long's comment,

> Even if the addict does not intend to stay off drugs, it reduces his habit and decreases its cost. This spares him the hassle and society the crime cost of his addiction for some period even if only a few days after the process is complete.[112]

Outpatient or Ambulatory Detoxification

Methadone substitution for heroin addiction within an outpatient setting had some of the essential features of the inpatient program. Those features were to stabilize an addict on a low dose of methadone and thereby reducing

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[111] Anthony Raynes, et al., "Evaluation of Hospital Detoxification Using Various Outcome Criteria," Proceedings of the Fifth National Conference on Methadone Treatment (New York: National Association for the Prevention of Addiction to Narcotics, 1973), 675.

[112] R. W. Strelinger, et al., "Follow-up Evaluations of Inpatient Detoxification Patients," Proceedings of the Fifth National Conference on Methadone Treatment (New York: National Association for the Prevention of Addiction to Narcotics, 1973), 470.

the abstinence syndrome. Subsequently the doctors decreased the dosage systematically until the addict was no longer dependent.

According to Carl Chambers the main advantage of ambulatory detoxification was that while the patient was in treatment he could begin to relearn socially acceptable patterns of behaviour. Since the patient in treatment was no longer required to procure heroin he had both the opportunity to establish himself in more traditional social roles as employee, student, spouse and parent as well as decreasing his involvement with the drug subculture. Institutionalization could have jeopardized the addict-client's job security and therefore be seen as an unfavourable alternative to him. Hospitalization also entailed the difficulty of re-entry into community life and limited some social activities and contacts with families. Outpatient detoxification avoided these problems.[113]

In some ways the addict was relieved from the burdensome hassles of obtaining daily supplies of heroin, thus allowing him to mobilize his surplus energy toward more constructive activity. Assuming that an addict was successful in the necessary life skills required to live from day to day, the positive outcome of these activities reinforced a positive self-image of the treated patient. The patient could be seen in contrast to the inpatient-client who lived within a structured treatment setting and was not re-

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[113]Brill and Chambers, "Multimodality Approach," Social Work, 45.

quired to take any personal responsibility for his treatment regimen.

In Carl Chamber's experience with the detoxification of narcotic addicts in outpatient clinics, he found this modality to be most effective in the treatment of addicts who were well integrated, highly motivated to give up addiction, and those who were recently addicted.[114]

The Narcotic Addiction Rehabilitation Clinic of Philadelphia General Hospital was the first setting to implement the ambulatory detoxification approach to opiate addiction.[115]

After a two year evaluative period of the Philadelphia experience, the results indicated that approximately 25% of the population were either capable or willing to complete detoxification; 25% were incapable of becoming abstinent but were willing to remain in the methadone maintenance program; the remaining 50% neither finished detoxification nor sought further treatment.[116]

With the current high cost of hospital treatment, outpatient detoxification was a less costly alternative because a smaller number of professionals and administrative staff were required to operate such a facility.[117]

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[114] Ibid., 42.

[115] Ibid.

[116] Ibid., 44.

[117] Chambers, "Inpatient Techniques," Methadone, 193.

The attrition rate of 50% as demonstrated by some programs occurred despite the addict's professed desire to kick the drug habit. In another study completed in Philadelphia, 68.6% of the population terminated the detoxification program against medical advice.[118]

Detoxification on an outpatient basis was seen by some as a highly selective treatment modality which was not generally applicable to a heroin population.

The major differences observed between those successfully completing detoxification and the dropouts were that the successful patients were: 1) the ones with more formal education, 2) the unmarried addicts, 3) the multiple drug users, 4) those addicts over 35, and 5) those who became addicted after age 27 tended to remain in the program and complete detoxification.[119]

The married heroin user who had one dependency problem seemed to be desirous of getting out of the program as soon as possible.

An apparent clinical disadvantage recorded in ambulatory detoxification was the lack of control outpatient programs had in preventing and understanding the problem of continued drug abuse.[120]

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[118] C. Chambers, "Characteristics of Attrition During Ambulatory Detoxification," in Methadone: Experiences and Issues. Ed. by C. Chambers and L. Brill (New York: Behavioral Publications, 1973), 201.

[119] Ibid., 200.

[120] C. Chambers, et al., "Drug Abuse During Ambulatory Detoxification," in Methadone: Experiences and Issues. Ed. by C. Chambers and L. Brill (New York: Behavioral Publications, 1973), 203.

In the early stages of ambulatory treatment one study reported that the incidence of abuse did decrease through the detoxification period. With 40 mg. of methadone during phase I of detoxification, heroin was abused 61.4% of the time. In the later stages of detoxification when 20 mg. of methadone was dispensed, heroin was abused 34.3% of the time.[121]

The researchers of the above study concluded: "From this data, one should not expect more than one-half of the patients in such programs to cease abusing drugs even during the time one attempts to detoxify them."[122]

C. Methadone Maintenance

Methadone maintenance programs were generally operated on an ambulatory basis. Some programs necessitated the hospitalization of the patient so that he could be stabilized on an adequate dose of methadone. After the initial period of stabilization the patients were maintained on methadone within outpatient facilities.

Some clinics require the oral consumption of methadone under supervision of clinic personnel. This procedure required the daily attendance of the patient at the out-

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[121] Brill and Chambers, "Multimodality Approach," Social Work, 45.

[122] Chambers, et al., "Drugs During Detoxification," in Methadone: Experiences and Issues, 210.

patient clinic. Most clinics required daily urine samples from the patients. The urines were analyzed for opiates, barbiturates, and amphetamines. Various programs throughout the United States and Canada make provision for dosages to be taken out of the clinic if the addict, 1) has had consistently clean urines over a specified period of time, 2) displayed socially responsible behaviour, and 3) has had legitimate reasons for taking dosages out.

In addition to these points, many ancillary services were provided to meet the needs of the patients maintained on methadone. Among these services were individual and group psychotherapy, recreational, occupational, and educational opportunities. These services have grown in significance since the inception of the methadone maintenance treatment modality introduced by Drs. Dole and Nyswander. Some facilities existed that dispensed only methadone and provided no other services. Budgetary considerations were often the primary reason for the lack of other services being available to a clinic's population.

In terms of chemotherapeutic treatment modalities, other than heroin maintenance, the most common approaches utilizing methadone fell into three major modes of treatment. They were high dosage of methadone, low dosage of methadone, and methadone supplemented with a narcotic antagonist.

Dr. Avrim Goldstein has said, "It seems obvious that methadone maintenance will be adopted widely as the appro-

priate medical therapy for this condition."[123]

High Dose Methadone Therapy

In their 1965 paper on methadone maintenance treatment for heroin addiction, Drs. Dole and Nyswander published their classic work.[124] The paper explained a high dosage methadone treatment procedure that has become the prototype for other such programs in the United States. During the effort to treat the chronic problem of opiate addiction, Dole and Nyswander sought medication that would return the compulsive long term heroin users into socially productive citizens. Realizing that the drug must act as a substitute for the opiate, they arrived at the following requirements of that substance. The drug must be: 1) orally effective, 2) non-toxic and safe given over a period of time, 3) able to decrease preoccupation with heroin use, 4) stable without frequent dosage adjustments, and 5) acceptable to the addict-client.[125]

One of the important side effects that was not

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[123]R. C. Wolfe, "Methadone Maintenance as Medical Treatment: The Continuing Need for Controlled Medical Study," Proceedings of the Fifth National Conference on Methadone Treatment (New York: National Association for the Prevention of Addiction to Narcotics, 1973), 723.

[124]Dole, "Medical Treatment," 80-84.

[125]Leon Brill, "High versus Low-Dosage Maintenance Therapy: A Review of Program Experiences," in Methadone: Experiences and Issues. Ed. by C. Chambers and L. Brill (New York: Behavioral Publications, 1973), 150.

anticipated was that methadone met all of the criteria listed. Tolerance to methadone was so marked that stabilized patients felt little or no physiological or psychological changes after ingestion. Methadone also induced tolerance to other intravenous narcotics; therefore, the continued intravenous use of heroin after methadone maintenance tended to reinforce negatively heroin use. Secondly, the reduction of the instrumentally reinforced heroin seeking behaviour diminished as well. The negatively reinforced experiences were: preoccupation with heroin, the hypodermic syringe, and the addictive life style or hustling syndrome of the addict.[126]

In the early stages of the development of their theory of addiction, Drs. Dole and Nyswander believed that prolonged opiate abuse created a metabolic disorder. Much of their original work spoke of narcotic hunger and craving as being necessary symptoms that must be erradicated before the addict could be treated. In their opinion, as stated earlier in this study, the addict suffers from a chemical imbalance or metabolic disease. The disease (addiction) is seen as a physiological need that can be satisfied with an adequate dose of methadone. In this sytem, the heroin addict is considered a victim to the organic needs of his body.[127] Even though the evidence for the metabolic theory

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[126] Ibid., 151.

[127] V. Dole, "Research on Methadone Maintenance Treatment," in Methadone Maintenance. Ed. by S. Einstein (New York: Marcel Dekker, Inc., 1961), p. 27.

was circumstantial, it has formed the basis for many methadone maintenance programs. In fact, Jacob and Willinger maintained that addiction seen only as a metabolic process was a simplistic view.[128] Bernstein has stressed that, "psychodynamic replacement in addition to pharmacologic replacement" was needed in maintenance programs.[129]

Despite the current challenges to the explanation of heroin addiction, Dole's and Nyswander's method of treatment was posited as the most effective way of treating heroin addiction. Within their program a dose of 80 mg. to 120 mg. was utilized in order to block any heroin craving.

One point of inconsistency that the metabolic theory suggested was that because addiction was an organic disturbance, psychotherapy or rehabilitation may be viewed as a secondary part of the treatment plan. The metabolic view has never answered Goldstein's criticism that there were large numbers of ex-addicts who report that they no longer have narcotic hunger.[130]

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[128] O. Jacob and B. Willinger, "Tang with Therapy," Fourth National Conference on Methadone Treatment Proceedings (New York: National Association for the Prevention of Addiction to Narcotics, 1972), 351-353.

[129] M. H. Bernstein, "Psychodynamic Considerations in Methadone Maintenance Treatment," Fourth National Conference on Methadone Treatment Proceedings (New York: National Association for the Prevention of Addiction to Narcotics, 1972), 369-370.

[130] A. Goldstein, "The Pharmocologic Basis of Methadone Treatment," Fourth National Conference on Methadone Treatment Proceedings (New York: National Association for the Prevention of Addiction to Narcotics, 1972), 27-32.

The focus of the high dose programs has been directed away from the intrapsychic explanations for heroin addiction and has focused on counselling services that are geared to so-called concrete approaches to help the patients cope with problems associated with job, school, training, welfare, and family problems.[131]

Low Dose Methadone Therapy

Within the literature there were a number of writers who also reported success with a low dose maintenance program.

Some studies suggested that the low dose approach yielded fewer side effects, facilitated easier detoxification if required, reduced the risk of diversion of the drug to illegal demands, and reduced the danger of accidental overdose to non-tolerant individuals.

These programs tended to administer 2 1/2 mg to 50 mg. of methadone daily per patient. According to Brill and Chambers, 40 mg. to 50 mg. was an average daily dose.[132]

Primm reported that the administration of methadone at these levels formed a psychological blockade to continued heroin craving. These programs have been called methadone sustinence programs rather than maintenance.[133]

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[131] Brill, High versus Low-Dose, p. 152.

[132] Brill and Chambers, "Multimodality Approach," Social Work, 40.

[133] G. J. Berry, "Dose-Related Responses to Methadone, Including Placebo Therapy," Fourth National Conference on Methadone Treatment Proceedings (New York: National Association for the Prevention of Addiction to Narcotics, 1972), 409-410.

In the conclusion of one study of Bowling, et al., completed at the West Philadelphia Community Mental Health Consortium Narcotic Addict Rehabilitation Program, the researchers found no significant statistical differences in those areas commonly used to measure rehabilitation, namely employment, criminality, and extraneous drug abuse when studying both high dose and low dose methadone maintenance groups.[134]

V. Evaluation of Methadone Maintenance Programs

As Dr. A. Goldstein once commented, methadone maintenance programs have become widely accepted in the treatment of heroin addiction.[135] The literature conveyed the impression that methadone was an experimental procedure and was not fully accepted as a proven treatment procedure.[136] Among the methadone critics were those who could not accept substitution addiction as a solution for any narcotic problem. Most vociferous of the critics of maintenance therapy were those arguing for a drug free state. In the words of one superintendent of Daytop Village in New York City, methadone treatment was, "Malpractice and a cop-out, a cheap substitute for an expensive habit of

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[134]Chatwynd Bowling, et al., "High Versus Low-Dose Maintenance Therapy: En Empirical Test," in Methadone: Experiences and Issues. Ed. by C. Chambers and L. Brill (New York: Behavioral Publications, 1973), pp. 147-148.

[135]Wolfe, "Methadone Maintenance," Proceedings, 723.

[136]Report of the Commission, Treatment, p. 30.

self indulgence."[137]

In the summary of their review of methadone maintenance programs, the LeDain Commission has concluded that "for better or for worse, methadone maintenance provides to date the cheapest and the most effective weapon we have for dealing with large-scale heroin dependence."[138]

Evaluation and research have become the empirical tools utilized to ascertain, with more objectivity, the clinical results being obtained by this particular treatment modality. Since Dole and Nyswander completed their initial experimentation with methadone maintenance in 1965, several research projects have systematically evaluated the efficacy of some of the major programs in the United States.

The World Health Organization (W.H.O.) Expert Committee, a group from the Columbia School of Public Health and Administrative Medicine, and the Committee on Alcoholism and Drug Dependence (Committee of the American Medical Association, A.M.A.), and in cooperation with the Committee on Problems of Drug Dependence of the National Research Council (N.R.C.), have evaluated methadone maintenance in 1967, 1969, 1970 and 1971.

The W.H.O. evaluation of 1969 and 1970 favourably evaluated methadone maintenance but recommended that the

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[137] D. Casriel, testifying before the House of Representatives, Select Committee on Crime, Hearings, 92nd Congress, 1st Session, 1971, Part I, pp. 296-297.

[138] Report of the Commission, Treatment, p. 30.

treatment remain experimental because of some suggestion of lack of representativeness of the patients in the population.[139]

The A.M.A.-N.R.C. committee has reconsidered its cautious position of 1967. In that year, methadone maintenance was considered to be promising research; however, methadone treatment was not considered to be an established treatment modality.[140] In 1971, this Committee accepted the maintenance approach as a valid, ethical, medical treatment procedure for heroin addiction. The Committee also noted that continued research and evaluation was needed in this area, but the efficacy of this treatment was not questioned.[141]

Columbia University has cooperated in conducting evaluation procedures for the New York City Programs. Under the directorship of Francis R. Gearing, two notable studies of 1969 and 1970 were conducted. The results of the 1969 study indicated that 80% of all the patients admitted into the methadone maintenance program continued to follow through in treatment.

There was also a dramatic reduction in arrests and an increase in employment of those treated in the New York programs. Gearing found that 10% of the population treated continued to use drugs outside the program and 8% abused

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[139] Nelkin, Methadone Maintenance, p. 56.

[140] Ibid.

[141] Ibid.

alcohol.

The second study, conducted in 1970, recommended a demonstration project involving private practitioners who, through an extension of the existing program, would treat patients who required few supportive services.[142]

Dr. Vincent Dole has suggested that a decentralized program through the private sector of medical practitioners would be an effective way of serving an addict population.[143] Availability of the drug to the community that required it, in the opinion of Dr. Robert G. Newman, could only be achieved through the major participation of private practitioners.[144]

As methadone has become a more acceptable treatment modality, continued research has been necessary to evaluate the success of the different approaches that were being implemented using methadone maintenance as a basic narcotic substitute.

To justify the continued use of methadone in the treatment of heroin addiction, research would be a necessary procedure that could systematically gather data from the program population.

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[142]Francis Gearing, "Methadone Maintenance Treatment Program: Progress Report Through March 31, 1971 - A Five-Year Overview," submitted to Narcotics Addiction Control Commission (mimeographed, May 14, 1971), p. 8.

[143]Nelkin, Methadone Maintenance, p. 59.

[144]Ibid.

Evaluation has become the shibboleth for continued financial support and political cooperation necessary for the ongoing operation of these treatment facilities. Politicians answerable to the taxpayers have been cautious in directing monies to drug treatment programs generally because of their controversial nature. Society has been critical of shifting the focus of drug treatment from the punitive to the rehabilitative. Populations far removed from the drug scene may understand that incarceration has not been successful at rehabilitating criminals, yet punishment for drug use exemplifies the social values of many people in North America.

Treatment has been equated with mollycoddling. Therefore, those representatives of the people were answerable to an electorate who expected that 'success' in treatment meant that the patient 1) remain free of criminal activity, 2) obtain employment, and 3) abstain from using drugs.

Given these assumptions of society's expectations regarding social productivity, the research has consistently studied and evaluated programs of methadone maintenance using these strongly sanctioned social values as guidelines to the acceptance of effective programming.

Measurement of program goals, cost effectiveness, manpower utilization, budgeting policy, and effectiveness have been easily set down in terms of a blueprint for program design.

In the opinion of S. B. Sells, the execution of these concepts unfortunately was difficult to operationalize. Most research done has had the practical limitation of being conducted in the field rather than in a laboratory setting.[145] With this restriction of the realities of the addict in his environment, the researchers must accept and accommodate his study to these limitations. Sells says,

> the ideal of setting up an experimental project in which all relevant factors are controlled and all sources of variation balanced-out must remain a dream to ease the frustrations of tired investigators.[146]

The variables were almost endless. To be taken into consideration were the discriminating elements for the patient himself, secondly, the treatment he was to receive, and thirdly, the criterion with which he would be judged regarding his success in a program.

The content of the evaluation and epidemiologic literature as it pertains to patients and classification contained the following: 1) sex, 2) age, 3) race, 4) ethnic background, 5) personal development background, 6) life style, 7) history of drug abuse, 8) criminality, 9) education, 10) work history, 11) family relations, and 12) physical and psychiatric histories.[147]

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[145] S. B. Sells, "Evaluation for Treatment of Drug Abuse," Fifth National Conference on Methadone Treatment Proceedings (New York: National Association for the Prevention of Addiction to Narcotics, 1973), 1363.

[146] Ibid.

[147] Ibid., 1363-1364.

Treatment classification for opiate addiction was as varied as the number of methadone programs themselves. The differences have been reviewed earlier in this study.

The main categories were: inpatient and outpatient detoxification, outpatient maintenance (low dose and high dose programs), narcotic antagonists, and finally residential methadone maintenance.

The ultimate goal of treatment classification was to extract those factors that produced the desired effect in terms of criteria and patient variables. Until it is known which single variable, or combination of variables, such as the patient characteristics, the treatment environment, the program leadership, and the caring by staff, are the necessary conditions for improvement, evaluative research must factor out those critical dimensions of methadone maintenance.

The criterion for effectiveness is necessarily complex as the conditions that are decided upon to measure a program's results are value-related.

Treatment effectiveness could be measured in terms of intrapsychic changes, attitudes, values, and with behaviour change. In addition to these, life style, employment, self-advancement, family relations, and criminality could be selected from the many possible value-related indicators of success.

In the following pages, the researchers plan to survey some of the major evaluative studies of methadone

maintenance programs, indicating the criteria used to measure effectiveness of programs, success of the addict-clients, and also the results noted by the various researchers.

Dole and Nyswander reported in their 1965 classical study, that drug-related crime had been sharply reduced in this population. Ninety-one percent of the patients had been in jail previously and had more or less been involved in criminal activities. After treatment had been initiated, 88% of the patients showed arrest free records.

After repeated analysis of urine of the 174 patients, results showed 55% did not have a single positive urine containing heroin. Fifteen percent of this population continued to use heroin intermittently even though the pleasurable euphoric effects of the drug were minimized.

The striking finding reported by Dole and Nyswander was the high rate of social productivity as measured by stable employment and responsible behaviour.[148]

Wieland and Chambers, in a comparison study of in-patient and outpatient stabilization techniques, concluded that in terms of the criteria measuring social and personal rehabilitation there was no significant differences when comparing the two techniques.

As in the Dole and Nyswander study, the criteria used to measure these differences included employment,

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[148] Dole, et al., "Successful Treatment of Addicts," Methadone, pp. 75-85.

heroin abuse, and arrest histories.

Briefly, the outcome of the study indicated that: 1) 85.7% of the addicts were supporting themselves illegally while after treatment 77.8% had secured full-time legitimate employment, 2) after a minimum of twenty-one months treatment, 28.1% were detected as occasional abusers of heroin, 3) 90.6% of the addicts had been arrested prior to treatment while the prevalance of arrest had decreased to only 18.8% after treatment.

In summary, Wieland and Chambers advocated that although the method of stabilization on methadone was not significant, treatment decreased arrests and heroin abuse and increased legitimate work roles significantly.[149]

The Addiction Research Foundation in Toronto undertook a study of a research-oriented program of Methadone Maintenance in January of 1970. The criteria used for the measurement of success included an increased level of social stability and a decrease in drug use. Social stability meant, 1) increased employment, and 2) decline in criminal activities.

In terms of narcotic use, urinalysis revealed extraneous drugs in the urine of active patients 11.9% of the time and 15.9% of the time in discharged patients. The researchers reported that extraneous drugs were found 62% of the time

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[149] W. Wieland and Carl Chambers, "Comparison of Two Stabilization Techniques," International Journal of the Addictions, V (1970), 645-659.

prior to the stabilization process with methadone. While 59% of this population prior to treatment had been daily users, 70% had been using drugs other than heroin. After treatment there was a reduction in all drug use among the patients who had been in the program one year or more.

Regarding employment of the active treatment group, 66.7% of the patients were participating in vocational rehabilitation programs or working. Prior to treatment, 43.6% of this group were employed.

In terms of a sample of ninety addicts there was a 25% decrease in criminality. The researchers of this study noted that 66.7% of the patients had been arrested or incarcerated prior to treatment. After treatment, 40% of this group had been arrested.

One of the negative findings was that the female population who remained in treatment had a higher rate of arrest than those discharged during that year.[150]

Raymond Hanbury, Jr., et al., have commented that methadone maintenance treatment has resulted in viewing a drug free state as an inappropriate criterion for evaluating rehabilitation. They concluded that the major parameters in measuring success of patients on a methadone maintenance program included the following: 1) there must be a cessation

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[150] Mark Krakowski and Reginald Smart, Report on the Evaluation of the Narcotic Addiction Unit's Methadone Maintenance Treatment Program. Substudy No. 492 of the Addiction Research Foundation, Toronto, Ontario, 1972 (Toronto, Ontario: Addiction Research Foundation, 1972), pp. 1-56.

in craving for heroin, 2) acceptance of methadone dependence without illicit drug use, and 3) social rehabilitation as demonstrated by gainful employment and reduced criminality.[151]

These criteria lent further support to the rationale used in the studies already cited.

In a one year follow-up study of methadone patients at the Santa Clara County Methadone Treatment and Rehabilitation Program, four major areas were chosen as criteria for the evaluation of its treatment process.[152] They were: 1) decreased drug use, 2) decreased evidence of criminal behaviour, 3) increased employment, and 4) a generally improved level of social functioning.

The research design lacked a control group against which outcomes could be compared. Measures that were obtained were compared against the patients own baseline level of functioning. Ethically the staff and the administrators of this project felt that it would be improper to assign randomly patients into treatment and no-treatment groups. Data collection was completed by a structured questionnaire

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[151] R. Hanbury, Jr., et al., "The Role of Vocational Rehabilitation in Methadone Maintenance: Problems Establishing Criteria for Success," Fifth National Conference on Methadone Treatment Proceedings (New York: National Association for the Prevention of Addiction to Narcotics, 1973), 1239.

[152] D. Sechrest and T. Dunkley, "A One Year Follow-up of Methadone Patients on Drug Use, Criminal Behaviour and Wages Earned," Fifth National Conference on Methadone Treatment Proceedings (New York: National Association for the Prevention of Addiction to Narcotics, 1973), 1290.

administered by the staff.

The conclusions reached in terms of extraneous drug use at the end of the thirteen weeks of treatment indicate that 34.9% of the population were using heroin, while at the end of twenty-seven weeks of treatment this figure dropped to 16.3% of the population.

The researchers found that the criminal activity of the treatment population was of a less serious nature after the addicts were admitted to treatment. Those that did encounter the criminal justice system were involved in a less serious way than prior to treatment.

In terms of employment, the treatment population, after thirteen weeks of treatment had full or part-time jobs 43.4% of the time; prior to treatment this figure was 29.3%[153]

In a 1971-72 study on two matched samples, patients were assigned to two groups and were to receive between 20 mg. to 70 mg. of methadone. The second group ('blocking' group) received levels from 80 mg. to 120 mg. The two groups consisted of 28 patients each and they were matched for age, race, admission data and length of time in treatment. The two exceptions to the matching were marital status and education.[154] The low dose population seemed to be better

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[153] Ibid., 1292.

[154] J. Schut, et al., "Low Dosage Methadone Maintenance: A Re-Examination," International Journal of Clinical Pharmacology, Therapy and Toxicology, VII (1973), 48-53.

educated and contained more patients who were married.

The study was to cover a three-month period from November 1, 1971, to January 1, 1972. The comparative results of low and blocking doses were to be evaluated on two criteria, the first being successful social adaptation which would include employment, source of income, arrest, and jail history. The second criterion was continued drug use as measured by urinalysis. The low dose group appeared to have a higher rate of success in terms of the criteria used for measurement. The authors point out that this group was better educated and more apt to be married than the blocking group.[155] Despite the serious limitations to the population matching procedure used in this study, the criteria used to measure success were compatible with those used in other studies.

Hugh Williams, Clinical Director of the Narcotic Addiction Foundation of British Columbia, has spoken of the frustration and failure in the treatment of heroin addiction.[156] He saw the nature of the disease as being a complex interrelationship with psychological, physiological, metabolic and social components. Despite the complexities the Narcotic Addiction Foundation has established many programs to treat heroin addiction. Among the treatment modalities used were both low and high dose methadone

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[155] Ibid., 52.

[156] Hugh Williams, "Using Methadone to Treat the Heroin Addict," Canada's Mental Health, XVIII (March-April, 1970), 4.

maintenance programs plus outpatient and inpatient withdrawal. Because of the massive effort that the foundation has made, as well as expense, each of these programs were evaluated in terms of three dimensions. They were: 1) drug abuse, 2) employment, and 3) criminal activity.

According to Dr. Williams, these areas become more meaningful the longer the patient remains in treatment. From the viewpoint of the Narcotic Addiction Foundation of British Columbia, these three areas reflect the most accurate evaluation of rehabilitation of the addict.[157]

Summary

Methadone maintenance could now be considered a legitimate modality of treatment for heroin addiction. While society values a drug free state as the ultimate goal in the treatment of addiction, methadone programs have offered a reasonable alternative. Narcotic substitution therapy has enabled past addicts to function productively in the areas of employment, decreased criminality, and diminishing drug use.

Methadone maintenance has lent credibility to the principle that addiction is a medical problem with psychological and social ramifications rather than criminal behaviour demanding retribution from society.

Chapters IV and V contain the results of a methadone treatment program that has attempted to change the role of the addict as criminal to the addict as patient.

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[157] Ibid., 52.

The criteria by which this program was evaluated originates from the existing methadone maintenance literature.

VI. Characteristics and Side Effects of Methadone Hydrochloride

Methadone hydrochloride is a synthetic analgesic opiate. As was stated earlier, methadone is not a new drug. It was developed during World War II by a German scientist as a synthetic pain killer.[158] Its use in the United States became possible after the State Department's Technical Committee investigated the properties of methadone and were more favourably impressed than the German scientists were.[159]

Preliminary studies of the addiction liability of methadone were carried out under the direction of the National Research Council's Drug Addiction Committee. The experimental results demonstrated unequivocally that methadone produced dependence of the morphine type.[160]

Continued studies were completed to ascertain if the qualities that Himmelsbach had extracted regarding the characteristics of opiate drugs were also true of methadone. The qualities that Himmelsbach outlined were tolerance,

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[158] Nelkin, Methadone Maintenance, p. 40.

[159] J. Sapira, et al., "Addiction to Methadone Among Patients at Lexington and Fort Worth," Public Health Reports, LXXXIII (1968), 691-694.

[160] Ibid.

physical dependence, and emotional dependence.[161] Tolerance may be defined as the gradual decrease in the effects produced through the repetitious administration of the same dosage of the same drug. Physical dependence is a state of altered physiological functioning caused by repeated administration of that drug which necessitates chronic use of this substance in the prevention of the abstinence syndrome. Habituation refers to the psychological dependence of a chemical substance that has been repeatedly experienced by the human organism. Given these traits, Wikler and Frank have been able to establish, in experimental animals, that tolerance and physical dependence can occur through the continued administration of methadone.[162]

In Lexington, Kentucky human experiments were conducted on fifteen patients who were given subcutaneous injections of methadone from 28 to 186 days.[163] After a period of time, the behaviour of the men became equal to that of morphine addicts. These injections ceased much of the productive activity of these addicts who spent most of their time in bed, semisomnolent.

When the drug was abruptly withdrawn from those patients treated for less than 28 days, very little evidence

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[161] Isbell and Vogel, "The Addiction of Methadone," Methadone, 41-42.

[162] Ibid., 42-44.

[163] Ibid.

of the abstinence syndrome was manifested. Those treated for 56 days or more experienced definite signs of physical dependence. The abstinence syndrome was slower in onset but less severe and perhaps more prolonged than morphine. Those patients later complained of weakness, anxiety, anorexia, insomnia and tinnitus. The intensity of the abstinence syndrome was estimated using a point-scoring system of Himmelsbach. The scoring system has been calculated on men with strong physical dependence to morphine. In such cases the score usually runs between 50-60 points on the second and third day after abstinence. Scores of less than fifteen were regarded as not significant; fifteen to twenty as very mild; twenty to thirty-five was fairly mild.[164]

In summary, the abstinence syndrome occurring from methadone addiction was shown to be slow developing and mild when compared to morphine. When used ~~in~~ the treatment of morphine addiction sufficient dosages of methadone halted the withdrawal syndrome immediately.

Further experimentation was done to substitute methadone for morphine at a ratio of 1 mg. of methadone for 4 mg. of morphine. When methadone was abruptly withdrawn, a mild abstinence syndrome occurred, however, it was less severe when used in a withdrawal procedure rather than the addiction to methadone alone.[165] The results of these experi-

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[164] Ibid., 45.

[165] Ibid., 46-47.

ments absolutely confirmed that methadone has dangerous addictive qualities.

Martin, in 1970, summarized:

> ...in all probability it (methadone) produces like morphine, longlasting physiological abnormalities. Therefore, because of the toxicity...it should be used cautiously.... Systematic studies should be undertaken to assess potential and known effects of methadone maintenance as well as the desirable actions.[166]

The physiological and psychological effects of ongoing narcotic use are not clearly understood. Chambers, et al., have noted that carefully designed chronicity studies are seldom found in the literature.[167] Control designs taking into account sex, length of addiction, duration of treatment, methadone dose are not often found in the studies completed thus far.

The side effects reported can be listed in the following manner.

In 1970, Wieland and Yunger found no significant side effects which could be related to size of dosage in the addict patients treated. In this study, doses ranged from 50 mg. to 100 mg.[168]

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[166] C. Chambers, et al., "Physiological and Psychological Side Effects Reported During Maintenance Therapy," in Methadone: Experiences and Issues. Ed. by C. Chambers and L. Brill (New York: Behavioral Publications, 1973), 163.

[167] Ibid.

[168] Ibid., 165.

Jaffe, in the same year, studied 126 addicts and reported that constipation and sweating were dose-related.[169]

Wallich, et al., in 1969, compared the effects of female street addicts with their counterpart receiving methadone in a maintenance program. The street addicts reported that they suffered from amenorrhea, anovulation and infertility. Contrary to the street addicts, the study of the 90 women receiving methadone therapy revealed that 82 began to menstruate regularly following treatment. The investigators concluded that ovulation, conception, and pregnancy occur without serious difficulty to mother or child when the woman was taking methadone.[170]

Bloom and Butcher reported that female addicts of childbearing age once stablized on methadone, experienced a normal physiologic balance.[171] The researchers found in addition to this, increased frequency of urination in females, blurring of vision among high dose and younger patients, dose-related numbness of hands and feet, as well as significant weight gains for males and females.

Goldstein has provided the most systematic study of dose comparisons and side effects during the initial stages of methadone maintenance. The dosages varied from 30 mg. to 50 mg. to 100 mg. for an experimental period of three

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[169] Ibid.

[170] Ibid., 164.

[171] Ibid.

months.

His most impressive side effects were the following:

1) Dermatitis, constipation, impotence, difficulty in achieving orgasm and feeling high on methadone. After one month of maintenance all effects of this nature tended to decrease. Constipation and sexual dysfunction seemed to be the most consistent. These effects did not appear to be dose-related.

2) Drowsiness was reported by those receiving 50 mg. - 100 mg. daily, with this condition disappearing by the second month.

3) Excessive sweating was very common but was not dose-related. An unpredictable result was that sweating increased in some patients and decreased in others without reason.

4) Numbness, stiffness and tingling in the fingers, with accompanying pains some times radiating in the arms, was reported by 1/3 of the patients and did not appear to be dose-related.[172]

Chambers, et al., analyzed a population of certified narcotic addicts stabilized on methadone from 1970 to 1971. The population consisted of 637 patients. The most frequently reported side effects were: constipation, 42.2%; excessive sweating, 18.4%; anorexia, 18.2%; and nausea, 18%. Chamber's study does not indicate sleepiness/drowsiness, sexual problems and non-specific aches any more than the normal population for that age.[173]

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[172] Ibid.

[173] Ibid., 165-168.

Methadone has been shown to decrease blood pressure and pulse rate and not to alter or increase slow wave R.E.M. sleep. Morphine can be contrasted by evidence that it increases blood pressure and decreases R.E.M. sleep.[174]

Isbell, et al., also noted a decrease in respiratory rate and an increase in rectal temperature during chronic intoxication with methadone.[175]

Cuskey, in describing the Philadelphia program, concluded that 15% of the patients exhibited minor side effects. He found constipation, delayed menses, obesity, ankle oedema, occasional nausea, and impotence in males. His conclusions were basically those of Dole and Nyswander in their 1966 study. The side effects occurred only in the early stages of treatment with a small portion of the population.[176] Contrasting this study, Adams noted that 24% of the drop-outs gave side effects as the major reason for leaving treatment.[177]

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[174] W. Martin, et al., "Methadone - A Reevaluation," Archives of General Psychiatry, XXVIII (February, 1973), 293.

[175] Isbell and Vogel, "The Addiction of Methadone," Methadone, 41-52.

[176] G. Yaffe, et al., "Physical Symptom Complaints of Patients on Methadone Maintenance," Fifth National Conference on Methadone Treatment Proceedings (New York: National Association for the Prevention of Addiction to Narcotics, 1973), 507.

[177] R. G. Adams, et al., "Heroin Addicts on Methadone Replacement: A Study of Dropouts," International Journal of the Addictions, VI (June, 1971), 269-277.

Dobbs, in another study, found that side effects were prevalent in his program. His list of symptoms included drowsiness, frequent constipation, excessive sweating, interference with sexual functioning for both males and females, difficulty in urinating, bradycardia, menstrual irregularities and severe insomnia.[178]

Yaffe, et al., of the Missouri Institute of Psychiatry, undertook a study of side effects which revealed that symptoms occurring most frequently were excessive sweating, sleepiness and drowsiness, insomnia, loss of interest in sex, and body aches and pains. The symptoms of greatest duration (more than seven months) were sleepiness and drowsiness, excessive sweating, constipation, loss of interest in sex, and being jittery and tense.[179]

In a study of sexual performance of men on methadone maintenance, Raul Espejo, et al., reported in their study of 266 men that 11.2% of these individuals complained of sexual dysfunction. Their conclusions were that sexual dysfunction was related to methadone maintenance therapy as well as heroin and other drug abuse. The men who complained of this impairment were older and had been prolonged users of heroin. Espejo's study indicated that there does not seem to

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[178] W. Dobbs, "Methadone Treatment of Narcotic Addicts," Journal of the American Medical Association, CCXVIII (December, 1971), 1536.

[179] Yaffe, et al., "Physical Symptoms," Proceedings, 512.

be any distinct syndrome of sexual dysfunction while using methadone in treatment as may be the case of side effects from other drugs.[180]

[180] R. Espejo, et al., "Sexual Performance of Men on Methadone Maintenance," Fifth National Conference on Methadone Treatment Proceedings (New York: National Association for the Prevention of Addiction to Narcotics, 1973), 490.

CHAPTER III

RESEARCH DESIGN

Given the rationale for the necessity of this study being completed, the researchers sought to collect and analyze data related to the following research questions.

(I) What were the characteristics of the research population in terms of their psychological, social, economic, and drug use variables?

Specifically, the research questions pertaining to these areas were:

(a) What were the demographic features of the population?

(b) What were the normal and abnormal characteristics of the psychological profiles?

(c) How did the addict report his relationship between himself and his relatives and friends in terms of frequency of contact and quality of interaction?

(d) Both before and after treatment were those relatives and friends involved in:

(1) drug dependencies,
(2) criminal activities,
(3) earning or being eligible for a consistent and legal income?

(e) Since treatment, what was the frequency and kind of recreational activity participated in by this population?

(f) What was the frequency and severity of criminal changes of this population before and after treatment?

(g) What was the source of income, and length of time the addict had earned or been eligible for such monies both before and after treatment?

(II) What were the characteristics of this research population in terms of drug-related issues for the evaluation period?

Specifically, the research questions pertaining to these issues were:

(a) What were the treatment histories for heroin addiction in terms of method of treatment, treatment setting and profession treating?

(b) How had these addicts been referred for methadone treatment?

For the evaluation period:

(c) What was the frequency of heroin, barbiturate and amphetamine presence in the urine samples?

(d) What was the relationship between the mean dosage of methadone and extraneous drug use?

(e) What was the relationship between attendance in a voluntary group experience and extraneous drug use?

(f) What was the relationship between length of treatment on this program and extraneous drug use?

The researchers believed that the gathering of data from the research questions would lead to a more objective, systematic understanding of the research population. In the past, clinical impressions were subject to individual bias rather than empirically validated findings. Because

of the lack of research and the individual biases that exist about the controversial nature of methadone maintenance programs, the outcome of the methadone study will hopefully pose as the beginning documentation of the Windsor program.

The researchers further believed that the initial attempt to familiarize those individuals interested in the program must, by necessity, make gross measurements to establish the present operating structure and function of the program before a more highly focused research design can be implemented.

The researchers are desirous of partializing areas of future study whereby specific hypothesis may be tested with a sophisticated experimental design.

Due to the interest generated by the undertaking of the methadone study as demonstrated by the cooperation of the clinic director, the hospital administration, and the Addiction Research Foundation, the researchers believed that the study's findings would be carefully considered and might provide indicators for changes in the program. In addition to these considerations, a program established for the treatment of heroin addiction may be able to justify its continued existence by its willingness to be publicly evaluated.

Positive results published could contribute to the continuing treatment of heroin addiction by the methods shown to be successful. In the case of unsuccessful findings,

the cooperative attitude of staff which surrounds this program may well facilitate those constructive adjustments that were deemed necessary for a more effective program.

I. Population

The project was a study of a particular population rather than a sample. The population consisted of a group of male and female heroin addicts being treated with methadone at Windsor Western Hospital Centre Outpatient Clinic located at 1453 Prince Road, Windsor, Ontario.

These individuals were being treated with methadone dosages ranging from 5 mg. to 100 mg. The program may be described as a low-dosage methadone clinic. All of these patients were required to attend the clinic daily to receive their oral dose of methadone diluted in an orange juice drink. Generally, the medication was dispensed in the presence of a registered nurse assigned to work with this population on a full-time basis.

Under special circumstances, namely no extraneous drug use by the addicts, and the demonstration of socially responsible behaviour, the addict was allowed to take his methadone with him for holidays and other special times.

All of these addicts were the private patients of Walter J. Cassidy, M.D., F.R.C.P. (C). The clinic has been in operation since September 9, 1972. Each patient has been hospitalized from seven to ten days in order that they could be stabilized on methadone. Prior to hospital ad-

mission, the addicts were screened to ascertain if they were addicted to heroin for one year and exhibited a sufficient level of motivation and cooperation to be eligible for treatment. The motivation of the addict was assessed on the subjective basis of the interviewer in ascertaining whether the addict could manage to attend the clinic daily for his dosage of methadone. Cooperation was also determined by the addict's willingness to participate in sharing openly his current addiction problems. If the addicts were thought to be dangerous to the clinic staff or if they stated that they would not attend the clinic daily, they would not be accepted into the program. The screening was done by either Dr. Cassidy personally or the Addiction Research Foundation, 961 Ouellette Avenue, Windsor, Ontario.

The total number of patients at the time of this study was twenty-nine. Any patients who were admitted to the program after May 1, 1974 were not included in the research population.

II. Methodology

To answer the research questions and to ascertain the level of social functioning of the addict after being admitted to this program, the following tools have been utilized.

1. Structured Interview Schedule (See Appendix A) designed by the researchers with the purpose of gathering demographic data as well as information regarding source

and amount of income, length of service earning income both prior to and since methadone maintenance treatment; criminal charges both prior to and since treatment; source of referral for treatment; type, place, and profession administering previous treatment; frequency of recreational activity since treatment; frequency of contact with relatives and friends both before and after treatment; quality of relationship with these relatives and friends; frequency of criminal charges laid against relatives and friends prior to and since treatment; illicit drug dependency of friends and relatives prior to and since treatment; and legal versus illegal income source of friends and relatives before and since treatment was used.

2. Psychological tests used to measure normal and pathological profiles of the addict population were the Minnesota Multiphasic Personality Inventory (M.M.P.I.) and the Personality Research Form (P.R.F.).

3. Thin layer chromatography. The test accurately measured the presence of the following drugs in the urine: amphetamines, barbiturates, methadone, and opiates including heroin. The purpose of the use of this tool was to evaluate drug use during the evaluation period in order that the researchers could ascertain the frequency and variety of drug use. The urine test results were compared to the mean methadone dosage for the evaluation period to discover the relationship between level of methadone dosage and extraneous drug use.

4. Existing clinic files recording the individual dosage levels, admission dates, and voluntary groups attendance were released for the researchers' use.

The structured interview schedule was administered by the researchers allowing the natural order of appearance for the oral dose of methadone at the clinic. The addicts were told in advance the day the questionnaire was to be administered both by letter and by the clinic nurse. Each addict was asked to set aside fifteen to thirty minutes for the interview. Those individuals unable to remain for the time required were approached on an individual basis either by telephone or in person to set up an appropriate time convenient for both the patients and the researchers. All interviews were administered on a one-to-one confidential basis only.

The researchers further stressed the confidential nature of the study and every individual interview was proceeded by assuring the addicts that the interviews were coded and no personal names were used in the study.

The interviews themselves were done at the clinic. Since the order of arrival was unpredictable as well as the patient's free time on the particular day they were requested to complete the questionnaire, the researchers alternated interviews as much as possible. When more than one addict appeared at the clinic at the same time, the patients were selected, as noted above, in terms of who arrived first. Those remaining patients who were willing

to wait would be seen by the next interviewer who was free irrespective of the alternating schedule. Under no circumstance was any addict allowed to complete his own questionnaire. No persons other than the researchers administered the questionnaire. Anyone appearing "high" as subjectively evaluated by the researchers was not given the test until they were more responsible in terms of their overt behaviour. Any patient found to be in an upset mood was asked if the test could be given at a time when he was more able to complete fairly the interview schedule.

The researchers proceeded through the questionnaire in alphabetical order. Generally, the questions were read as they appeared in the questionnaire. In the sections pertaining to before and after treatment, the investigators gave special attention to emphasizing the time differences examined in the questionnaire. Since the questionnaire was administered and scored by the researchers, any questions that the addict did not understand were clarified. If the addict had difficulty responding to any question, he was encouraged to take his time and answer the question to the best of his ability as he remembered the facts to be.

Two separate psychological tests were given to the entire population on two occasions approximately one week apart. The groups were randomly assigned so half took the Minnesota Multiphasic Personality Inventory on the first day of testing and the other half took the Personality Research Form. On the second day of testing, opposite tests

were administered to the same group.

A classroom area was obtained so that chairs containing built-in writing surfaces were used. The patients were separated by at least one chair and talking was kept to a minimum. If any of the patients were uncertain as to the meaning of any questions, the researcher only provided enough information for the patient to understand the nature of the question. When the patients were unsure as to whether the question was true or false, the researcher responded by asking if the question was mostly true or mostly false for the patient.

Those patients unable to attend the regular testing periods were given the psychological tests at a more convenient time to them. Assuming there was no clinic time or space available to administer the tests, the researchers allowed some of the tests to be taken hom; however, this procedure was used with reservation. Strict time limits were set down as to the expected return of tests. If the test was not returned on schedule, the researcher contacted the patient and encouraged that the tests be brought in on the following day. These patients were also given the remaining test to complete either at the clinic on an individual basis or if the first test was responsibly returned, they could take the test home and return it to the investigators within the previous prescribed time period.

The rationale for choosing the Minnesota Multiphasic Personality Inventory and the Personality Research Form was

as follows:

A. Minnesota Multiphasic Personality Inventory (M.M.P.I.)

The M.M.P.I. was chosen for several reasons. The researchers wished to use a tool which objectively assessed some of the major personality characteristics. The M.M.P.I. measures the common disabling psychological abnormalities, thus providing the researchers with a baseline assessment of the key pathological disabilities of the population. The test was also chosen because it can be given to subjects age sixteen or over who have completed six years of schooling. The M.M.P.I. did not require the services of a psychometrist for its administration. The instructions for its use were straightforward and required a minimal amount of training to supervise the testing process.

The test contained validity scales that informed the researchers of the veracity of the responses. The M.M.P.I. had an additional benefit of being standardized by computer scoring, thus eliminating personal bias. The M.M.P.I. is a commonly administered, well-respected, objective test within the professional community. Further, this test is now equipped with an addictive proneness scale which is relevant to this study.

B. Personality Research Form (P.R.F.)

Since the M.M.P.I. measures pathology, the researchers were desirous of balancing the psychological profiles of the patients with a test that would assess the

normal traits of the personality.

Clinically, the areas measured by the P.R.F. were important descriptively for the understanding of the major parameters of the normal person. This test has been used in the study of other addict populations allowing for some basis for comparison.

The P.R.F. is also an objective test that is standardized, easily scored, and amenable to statistical manipulation. The P.R.F. is as easily administered as the M.M.P.I., since this test does not require the services of a trained psychometrist with respect to its administration, the addicts were able to take a test with the researchers with whom they felt comfortable.

Since the format of the P.R.F. is similar to the M.M.P.I., the two were administered simultaneously to opposite halves of the population with minimal time being taken to explain the differences between the two tests. It appeared that addicts were basically suspicious, thus by using similar tests, the researchers had to explain less than if they used two grossly different tests.

C. Urinalysis

The urine was refrigerated after taken so as to retard any bacteriological activity, thus yielding better results in terms of measuring presence of drugs in the urine.

The urine was tested for the presence of extraneous drugs, namely amphetamines, barbiturates, or opiates.

Urinalysis is the only objective measurement of the existence of such drugs. In the methadone program, urines were never taken on a daily basis to examine the actual drug use of the entire population prior to the study.

The method by which the urine was analyzed involved a two-phased system of thin layer chromatography. Both standard and controlled systems were operating whereby a cross-checking system for validation of results was utilized. The system employed in this study insured a reasonable level of accuracy in measuring the presence of extraneous drugs.

The urine of the patients was collected daily for a two-month period starting June 4, 1974 and ending August 2, 1974. The urine samples were taken from all patients in the program and not just those being considered for the research study. This practice minimized any discriminatory feelings that might be generated by only selecting certain individuals for urine examination. The urine was collected in two places, namely the methadone clinic at the hospital as well as the west wing of a psychiatric inpatient facility at the methadone clinic from 9:00 a.m. to 5:00 p.m., Monday to Friday. The urine was taken at the west wing on Saturday and Sunday between the hours of 9:00 a.m. to 3:30 p.m.

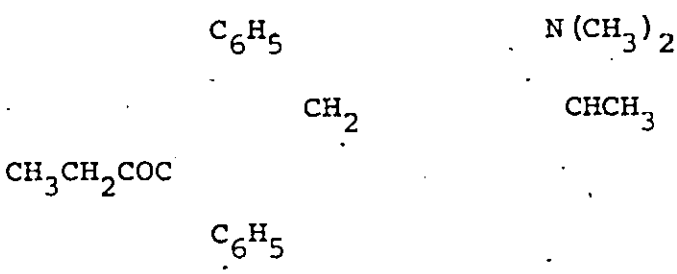
The process of taking the urine was an unsupervised procedure. However, anyone refusing to produce a urine sample was not given their daily dosage of methadone. If any urine was suspect because it was cold, miscoloured, or

in any way spurious, the nurse asked for a second sample before the methadone was dispensed.

III. Operational Definitions

The following were the operational definitions used in the research design of this thesis.

Methadone Hydrochloride - The chemical equation for this drug is:



Chemically this drug consists of 6-Demethylamino-4 4 Diphenyl-3-Heptanone Hydrochloride.

Orange Juice Drink - The beverage was an unsweetened, canned orange juice drink served directly from the container. No addictive substance other than methadone was used. The brands varied, but generally either SAICO or ALLEN'S juice was used.

Methadone Maintenance Treatment - Methadone maintenance is a procedure through which an addict is provided with daily oral doses of methadone on an outpatient basis. Within this form of treatment, the addict receives an increasing amount of methadone until he reaches a dose that is stabilizing. This means that the dose stops any withdrawal symptoms and theoretically blocks the euphoric effects of heroin use.

Higher Level of Social Functioning - Social functioning was both a subjective and objective evaluation of four major dimensions. Objectively, if the frequency of heroin use and other extraneous drugs declined in the two month evaluation period, if the addict subjectively reported that the quality and frequency of his relationships with both relatives and friends indicated that those individuals were less involved with illicit drug dependencies including alcoholism, less involved in criminal activity, and had a consistent and legal source of income since treatment, then the addict was considered to be at a higher level of social functioning than he was prior to treatment.

Extraneous Drug Use - The term denotes the illicit use of amphetamines, barbiturates, or opiates as measured by the thin-layer chromatography of the patients treated by methadone maintenance for heroin addiction.

Criminal Charges - In this study, crimes have been placed on a twelve-point continuum, from the least serious to the most serious. The following charges represented an often-cited survey of crimes committed by heroin addicts. From least serious to most serious they are, minor traffic violations, impaired driving, possession of drugs, theft under $200, violation of probation or parole, theft over $200, fraud, assault, trafficking in drugs, armed robbery, rape, and murder or attempted murder.

Consistent and Legal Source of Income - Consistent was defined as the predictable payment of monies from an employer

or a social service for work performed or eligibility requirements being fulfilled. Legal source of income was the obtaining of any monies from such sources as full-time employment, part-time regular employment, unemployment insurance or vocational rehabilitation, training grants, seasonal employment, welfare or mother's allowance, parental support or friend's support.

Illegal Income - Income from a source other than legal included theft, dealing in drugs or any other offense as found in the Criminal Code of Canada.

Quality of Relationship - This concept involved a subjective reporting by the patient of his relationships with friends and relatives. In this study, the quality was evaluated on a five-point scale. The categories were:

(1) couldn't be worse
(2) less than adequate
(3) adequate
(4) more than adequate
(5) couldn't be better.

This applied to both before and after treatment.

Heroin Treatment History - The summary involved all past treatments pursued by the patient for heroin addiction. In the study, the treatment was evaluated in terms of six possible treatment modalities. They were: chemotherapy withdrawal from heroin, chemotherapy maintenance with another addictive substance, psychological testing, individual psychotherapy, group therapy and milieu therapy.

Evaluation Period - The concept referred specifically to the collection of urine for two months (60 days) starting on June 4, 1974 and ending August 2, 1974.

Voluntary Therapy - The attendance of patients in group therapy from one and one half hours per week on a voluntary basis constituted voluntary therapy for the purposes of this study.

Length of Voluntary Therapy - This period of time included the frequency of attendance in relation to the length of time in the methadone maintenance program.

Low Dosage Methadone Maintenance Program - A medical procedure that administers daily oral doses of methadone in an orange juice drink ranging from 5 mg. to 100 mg. of the drug. In this study, the program was conducted on an outpatient basis.

Controlled Length of Methadone Treatment - The period of time included the number of days the patient had been in daily attendance for treatment since being hospitalized. The length of treatment only measured the amount of time the patient had been involved in the program at Windsor Western Hospital Centre.

Drug Dependency - The cessation of the drug or drugs used elicits abstinence syndrome causing characteristic symptoms of physiologica dysfunction such as sweating, vomiting, chills, diarrhea, lacrimation, and rhinorrhea.

IV. Research Procedures

Procedurally, the researchers carried out the collection of the data in accordance with the following format.

The structured interview schedule was the first research tool to be implemented. As outlined earlier in this chapter, the interviews were administered at the methadone clinic during the regular office hours.

The rationale for beginning at this point was twofold. Firstly, the schedule was personally administered on a one-to-one basis allowing the researchers to develop a sense of rapport with the methadone patients; and thereby allowed the patients the opportunity to become familiar with and react to the research project. Secondly, the researchers believed that administration of a positive, abbreviated, successful and personally engaging experience initially would establish, in the methadone patient, a commitment to the program.

The administration of the two psychological tests followed the structured questionnaire. The researchers believed that this was the next logical, sequential step for several reasons. The tests required approximately two hours on two separate occasions, necessitating their completion outside of clinic hours. The investment of the patient's time was greater than was necessary for the interview schedule above; therefore, there was a greater commitment than any previous requirement of this research study.

Secondly, since these tests dealt with mental health issues, they could have been viewed by the patients as more threatening. To offset this concern, the researchers offered to selectively share the test results with each individual patient. It was hoped that this open approach would be conducive to negating any suspicious feelings as to the secret nature of the psychological tests. The researchers hoped that sharing the results of the test would create a greater commitment to the testing procedure.

Finally, the collection of urine potentially represented the greatest threat to this population as a whole. The researchers believed that the two previous experiences, namely the structured interview schedule and the psychological testing established an adequate level of relationship with these patients thereby facilitating a more successful adjustment to such a demand.

All patients currently on the program including a few new admissions after the cut-off date, arbitrarily set by the researchers, were required to give urine daily so as not to discriminate between the research subjects and the recent participants in methadone treatment. Data from the urinalysis of recent participants was not used in this study.

The researchers chose to implement the urinalysis procedure last in order that any hostility generated from this last procedure would not have a chance to influence the results of the previous mentioned research tools.

V. Type and Limitations of Design

According to Tony Tripodi, et al., in The Assessment of Social Research, this study may be classified as a program-evaluation study.[181] Basically these studies are quantitative-descriptive in nature with the primary focus of describing characteristics of populations. While some population description studies use survey methods, they often utilize sampling techniques from which they can more accurately collect representative data. These studies frequently contain numerous variables.

As in the case of this study, numerous variables were collected of a demographic, social, economic, educational, psychological and physiological nature. The compilation of this data was facilitative in describing a group of people who are members of a methadone maintenance program. The design has elicited those key variables as have been searched out of the literature. The research questions that follow required the use of a structured questionnaire to extract the information the study required. The ethics, illegality, and practical difficulty of searching past criminal, employment, and treatment records required the use of direct questioning of the population. The researchers believed that consistent with the stated research questions and the purpose of the study, the quantitative-descriptive category of research design best described our attempt to understand more of this population.

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[181] Tripodi, et al., The Assessment of Social Research, pp. 42-43.

Since there has been no previous research on the methadone project, the investigators felt a survey of the patients would provide some base-line understanding of a descriptive nature. The fact-gathering effort was partialized to investigate those variables felt to be important in the literature.

An empirical design required the presence of control groups or a comparative measurement of the same group with a time differential, the design of this study was limited to a program-evaluation design. The initial investigation had no advantage of previous research data that could either act as a control or could allow for the measurement of change over a period of time. The researchers were limited by the constraints of the required completion date of this study.

There were many limitations to this type of design that can be found in the literature as well as the problems the researchers themselves found despite attempts to achieve more. The limitations were:

1) Subjects become sensitized due to presence of the interviewer or they may respond inaccurately because of the "special atmosphere" created around the questioning process.

2) Subjects may genuinely feel they remember important information yet the memory has become inaccurate with time.

3) The response rate is generally less than 100% due to death, moving, or lack of cooperation thus the study may only yield results that are biased due to some self selection processes. Over or under represented sections of this population may become a factor as they can reflect inaccuracies in the group as a whole.

4) The questionnaire only taps opinions, attitudes, and beliefs, yet actual behaviour is not observed. The exception to this may include the results of the urine samplings as well as the objective data gathered through psychological testing.

5) The opinions, attitudes, and beliefs given may be the socially acceptable response rather than the actual.[182]

Because there was no pre-test-post-test, change was difficult to measure in the areas of urine analysis, and psychological testing. The change in urines within the period studied could only be viewed with caution because the differences were subject to numerous extraneous variables such as dwindling supplies of street drugs, personal motivation, summer months and vacation, group therapy, and dosage alteration. Changes in urines were viewed within these limitations.

The psychological tests were administered once, thus yielding only an initial measurement.

The self-report areas of criminality, occupation, income, and social relationships sought to evaluate the changes felt by the patients before and after treatment. The addict's responses were carefully recorded and clarification was sought if discrepancies occurred in the responses and the actual known behaviour. The researchers caution the reader, however, that self-report without outside validation can be spurious. The researchers felt that the

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[182] S. Labovitz and R. Hagedorn, Introduction to Social Research (New York: McGraw-Hill Book Company, 1971), p. 54.

closeness that generally existed between the subjects and the investigators may have elicited honest responses so far as was possible.

The patients studied must also be viewed with careful consideration in terms of generalizability. The patients were initially screened either by the psychiatrist or the Addiction Research Foundation. All patients were accepted regardless of psychological difficulties as long as they were eighteen years of age, and addicted to an opiate. The only criterion that negated the possibility of treatment was an uncooperative attitude on the part of the addict. He must fully agree to the treatment procedure or he would be rejected for treatment. The screening process tended to select only the most motivated for treatment.

Three addicts of our population refused to cooperate with the study. Their refusal may have had some biasing effect on the outcome of the research. The program staff unanimously agreed that the three who dropped out were the most incorrigible of the population. They also felt that, on the basis of information received, these three were also trafficking in drugs in the city and were known for their criminal behaviour by the police. The researchers were unable to persuade these three individuals to complete the psychological tests and the structured questionnaire. Two, however, gave daily urine samples and the third dropped out of the program.

Finally, the results must be evaluated carefully due

to the dropping out of some of the patients. In the research population, two were dropped because of non-attendance. One patient committed suicide during the evaluation period. Complete urinalysis was not available, however, his psychological profile and questionnaire data was included in the research project. Two were away for holidays and because they had proven trustworthy their dosages were given in amounts sufficient for the time they were away. No urines were taken during these times. In their cases, an average was taken of the days they were in attendance in the clinic.

CHAPTER IV

ANALYSIS OF DATA

The research questions, as outlined in Chapter III, are specifically dealt with in two sections. In the first section of this chapter a description of the research population according to the subsequent headings is included:

a) age
b) sex
c) nationality and race
d) religion
e) marital status
f) residence
g) education
h) recreational activities
i) referral source
j) method of past treatment
k) past treatment setting
l) past profession treating
m) psychological profiles

These variables are examined to describe the research population in terms of the frequency of observations and their related percentages.

The second section of Chapter IV deals specifically with the four evaluative variables discussed in a review of the literature. They are 1) criminality as measured by frequency and type of offense, before and after treatment, 2) employment as measured by the source and amount of income before and after treatment, 3) extraneous drug use as measured by the presence and frequency of heroin, amphetamines, and barbiturates in the urines, and 4) social relationships with relatives and friends, evaluated in terms of frequency of contact and quality of relationships. Additionally the relatives and friends were evaluated in terms of their drug dependencies, criminal activities, and receipt of consistent and legal income before and after treatment.

The relationship between extraneous drug use and the mean dose of methadone for the evaluation period, voluntary group attendance, and length of treatment on the Windsor program were included to ascertain if these three variables were associated with extraneous drug use.

Following Section II, the researchers summarized the significant demographic and evaluative criteria findings as they relate to the results other studies in the area of methadone maintenance treatment. In addition to the criteria variables, the researchers discovered some incidental findings which tended to support the evaluative variables as well as raise questions to be answered by future research.

I. Description of the Population

A. Age:

The population consisted of twenty-four persons ranging in age from eighteen years to twenty-nine years as shown in Table 1.

TABLE 1

AGE

AGE IN YEARS	FREQUENCY	PERCENTAGE
18-21	5	20.8
22-25	11	45.9
26-29	8	33.3
TOTAL	24	100.0

The largest category consisted of the 22-25 year olds which represented 45.9% (11) of the research population. The next largest group was the 26-29 year olds which represented 33.3% (8) of the population. The smallest group was also the youngest, those from age 18-21 years. The frequency of this group was five which composed 20.8% of the total population.

The mean and median age of the research population was 24.1. The mode was 24.0.

B. Sex:

The population consisted of seventeen males and seven females. The males represented 70.8% of the research population while the females represented 29.2% as illustrated in Table 2.

TABLE 2

SEX

SEX	FREQUENCY	PERCENTAGE
Male	17	70.8
Female	7	29.2
TOTAL	24	100.0

In an examination of the age and sex of the research population shown in Table 3, it was found that 33.3% (8) of the population was male and between the ages of 22-25. It was also noteworthy that the next largest category was the males aged 26-29, representing 25% (6) of the population. The females were fairly evenly distributed throughout the three categories.

C. Nationality and Race:

Of the total research population, 83.3% (20) were Canadian citizens while 16.7% (4) were American citizens living in Canada with landed immigrant status. The

TABLE 3

AGE BY SEX

AGE	SEX		
	MALE	FEMALE	TOTAL
18-21 years	60% (3)	40% (2)	100% (5)
22-25 years	72.7 (8)	27.3 (3)	100% (11)
26-29 years	75. (6)	25. (2)	100% (8)
TOTAL	(17)	(7)	(24)

research population was Caucasian with the exception of one person of the Negroid race.

D. Religion:

Examination of the religious affiliation of the population, revealed that 54.2% (13) of the patients were Catholic, 37.4% (9) were Protestant and 2 persons were unable to be categorized.

E. Marital Status

Almost 21% (5) of the study population were found to be single. Six persons or 25% were married. The remaining 16.7% (4) of the study population were separated, 16.7% (4) were divorced, and 20.8% (5) were living in a common-law union.

TABLE 4

MARITAL STATUS BY SEX

MARITAL STATUS	MALE	FEMALE
Single	23.5% (4)	14.3% (1)
Married	23.5 (4)	28.6 (2)
Separated	17.7 (3)	14.3 (1)
Divorced	11.8 (2)	28.6 (2)
Common-Law	23.5 (4)	14.3 (1)
TOTAL	100% (17)	100% (7)

In terms of an ongoing relationship with a marital or common-law partner, 45.8% (11) of the study population fell into these two categories. The remaining 54.2% (13) were single, separated, or divorced.

F. Residence:

The residence patterns of the population indicated that 41.7% (10) of the patients lived in apartments. The second largest category consisted of 25% (6) of the study population who lived with their parents. Those owning a home comprised 12.5% (3) of the patients. Two persons rented homes or boarded while one individual lived with relatives.

G. Education:

The range of the study population's educational achievement was from grades 6-8 to the completion of third year university. Table 5 shows the actual distribution of the study population. The educational level of attainment as measured by the mode was in the grades 9-11 category.

TABLE 5

EDUCATION BY SEX

LAST COMPLETED YEAR	MALE	FEMALE
Grades 6-8	17.6% (3)	(0)
9-11	35.3 (6)	42.8% (3)
12-13	11.8 (2)	28.6 (2)
Trade Training	(0)	28.6 (2)
Community College 2 years	5.9 (1)	(0)
University - 1 year	17.6 (3)	(0)
- 2 years	5.9 (1)	(0)
- 3 years	5.9 (1)	(0)
TOTAL	100% (17)	100% (7)

Those achieving grade 13 or less comprised 66.7% (16) of the study population. Academic achievement at the post secondary school level was attained by 33.3% of the population or eight individuals. At the community college and university level, only the males were represented. Males

were also found to be the least educated. Three males achieved grade 8 education or less. The females of the study population were represented at neither the community college and university levels nor in the lowest educational achievement category. All females in the study were found to have reached at least a grade nine education or some trade training.

H. Recreational Activities:

The researchers compiled an extensive list of recreational activities (See Appendix A). According to the data gathered, it was found that the patients' interests clustered around only a few activities; namely, visiting friends, watching television, reading, and listening to music.

The highly group-oriented and physically active pastimes were infrequently reported by this population. It appeared to the researchers that the data collected indicated that the study population participated in passive entertainment, largely within their own home.

I. Referral Source:

The most frequently reported source of referral to the Windsor program was an addict's friend. Friends referred 37.5% (9) of the respondents for methadone treatment. The family doctor referred 25% (6) of the patients

for treatment. Social services were responsible for referring 12.5% (3) of the respondents. Spouse and self referrals made up the 16.7% (4) of the referrals while hospitals and "other" category represented the remaining 8.3% (2) of the referrals.

J. Method of Treatment:

The researchers chose seven categories to cover past methods of treatment. The categories chosen were extracted from the literature as the most relevant treatment modalities employed for heroin addiction. To understand more fully the study population, the researchers felt it necessary to know what type of treatment had been utilized in the past, since the Windsor program has attempted to provide a maintenance program that was sensitive to past attempts at rehabilitation. The seven treatment approaches were: chemotherapy withdrawal from heroin, chemotherapy maintenance, psychological testing individual psychotherapy, group therapy, milieu therapy, and other, as shown in Table 6.

The most frequently utilized method of past treatment was chemotherapy maintenance with 45.9% (11) of the study population participating in this at least once. The next most frequently used modality was chemotherapy withdrawal which was tried by 29.2% (7) of the respondents. The remaining categories had been used on four or five

TABLE 6

METHOD OF TREATMENT

	FREQUENCY	PERCENTAGE OF TOTAL POPULATION
Chemotherapy maintenance	11	45.9%
Chemotherapy withdrawal	7	29.2
Psychological testing	5	20.8
Individual psychotherapy	5	20.8
Group therapy	4	16.7
Other	4	16.7
Milieu therapy	0	0.

occasions by the respondents. Only milieu therapy had no representation. The categories reporting the greatest frequency were those modalities that provided legal drug substitution on a temporary or permanent basis, suggesting that chemical replacement was the preferred choice of the addicts.

K. Past Treatment Setting:

The treatment setting data were required by the researchers to ascertain where the patients had chosen to seek treatment for heroin addiction. The setting was considered indicative of not only the place where the addict would seek treatment but also whether he was seeking non-medical or medical intervention. The six categories

chosen as places of treatment for heroin addiction were: private medical clinic, public medical clinic, private medical office, hospital, non-medical social service and other treatment settings. The private medical office was the place of treatment for 37.5% (9) of the respondents at least once. Hospitals were chosen by 25% (6) of the patients as a setting for heroin treatment. Public medical clinics were used by 20.8% (5) of the study population as a treatment setting. Non-medical social services and private medical clinics were used twice each. Only one person was reported in the "other" category.

The most frequent responses concerning treatment settings indicated a medical orientation to the place of treatment.

L. Past Professions Treating:

Given the orientations of the various professionals working within the settings outlined earlier the researchers used the following categories to ascertain the disciplines most actively involved in the treatment of addictions. They were: psychiatrists, family doctors, social workers, psychologists, social service workers, nurses and others. Family doctors were responsible for treating 45.8% (11) of the respondents. Psychiatrists had treated 33.3% (8) of the study population at least once before entering the methadone maintenance program. Psychologists treated 25% (6) of the patients. Social

workers treated 20.8% (5) of the study population. Nurses and social service workers had not been responsible for any previous treatment. "Other" professions were consulted twice. Again, as in treatment setting and referral source the medically oriented practitioners were the most frequently reported professions providing treatment. Of the non-medical practitioners, social workers and psychologists fairly evenly treated the remainder of those seeking treatment.

M. Psychological Profiles

As the researchers indicated in the methodology section of the research design, two separate psychological tests were administered to the study population. The results of these tests were as follows:

M.M.P.I.

Twenty-four individuals, seventeen males and seven females completed the M.M.P.I. Tables 7 and 8 show the mean t scores of the male and female populations respectively. The validity scales of the M.M.P.I. fell within the norm necessary to warrent the use of the test results. The researchers noted that there was little difference in validity of the lie scale for females or males. The validity scale (F) was slightly more elevated for males than for females.

Normal mean t scores fell within the 70 to 30 range. The male profiles were elevated on the Psychopathic-Deviance (#4), Schizophrenia (#8), and Hypomania (#9) scales. Their scores were seventy-five, seventy-three and seventy-three respectively. The lowest scales were the Social Introversion (#10), Hypochondriasis (#1), Paranoia (#6), Masculinity-Femininity (#5), and Hysteria (#3) scales, all reporting a score of sixty-five. Three scales were outside the mean as shown by the results of the Psychopathic-Deviance scale (#4) which indicated that ten individuals or 58.8% of the male population fell outside the norm. Eleven patients or 64.7% had scores falling outside the mean for Schizophrenia (#8). Eight persons or 47% of the patients had scores of seventy-one or more on Hypomania scale (#9). The remaining scales fell within the normal limits of seventy and thirty. These upper and lower limits were for t scores only.

The profile interpretations indicated that the male population tended to be overly self-critical. The self-critical responses may represent a tendency for exaggerating symptoms in an attempt to call for professional help or assistance. Further, the profiles indicated that the study population, at the time of testing, felt vulnerable and defenseless. These individuals appeared to be chronic worriers and displayed many symptoms of agitated depression and ongoing tension. Over half of this population had

TABLE 7

MEAN t SCORES OF MALE M.M.P.I. PROFILES

L	F	K	Hs 1	D 2	Hy 3	PD 4	MF 5	PA 6	PT 7	Sc 8	MA 9	Si 10

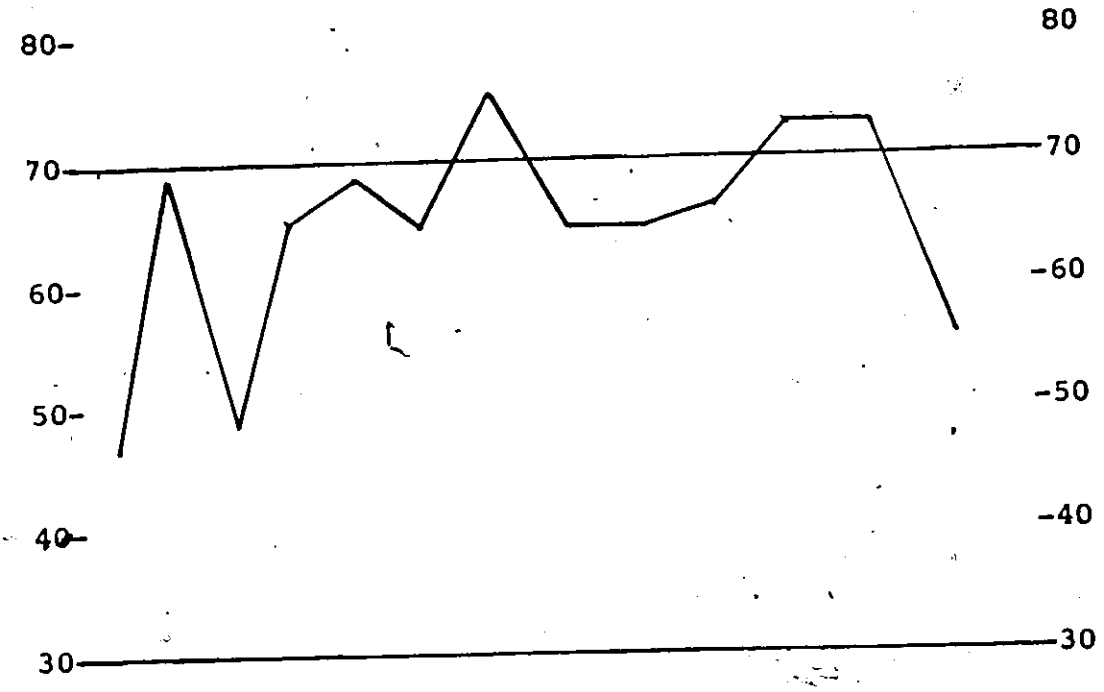
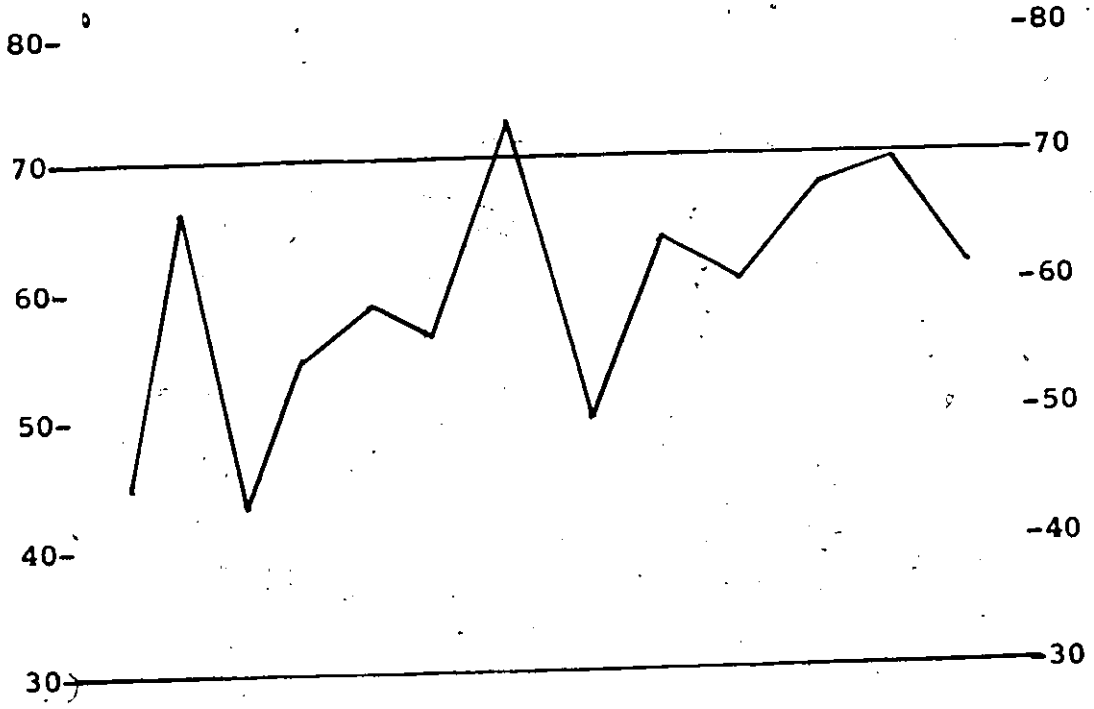


TABLE 8

MEAN t SCORES OF FEMALE M.M.P.I. PROFILES

L	F	K	Hs 1	D 2	Hy 3	PD 4	MF 5	PA 6	PT 7	Sc 8	MA 9	SI 10



difficulty with impulse control. Some expressed an over-concern for their bodily functions which were another dimension of excessive ruminations about what was considered unimportant matters. In addition to having poor impulse control, the addicts' profiles indicated that they experienced pronounced difficulty in dealing with their hostility. When these feelings were expressed openly, they would often take the form of antisocial behaviour. The M.M.P.I.'s most frequent report on the males in this study included two major traits. Fourteen or 82.3% of the male population were described as inner-directed individuals who were seen as quite socially perceptive and sensitive to interpersonal interactions. The characteristics of fifteen males or 88.2% of the study population could be described as indicative of a pattern of rejected masculinity with a concomitant expression of a passive, effeminate, non-competitive personality. Finally, eight males or 47% of the populations were assessed as having major emotional disorders.

The M.M.P.I. test results included the Macandrews addiction scale, measuring addiction proneness. Within the male population, twelve persons or 70.6% of this population were evaluated as having a severe addiction proneness. Another three persons each were assessed as having either moderate addiction proneness or lack of addiction proneness.

The female profiles were elevated on the Psychopathic-Deviance (#4), the Hypomania (#9) and the Schizophrenia (#8) scales. The scores were seventy-one, sixty-eight, and sixty-seven respectively. The lowest scores occurred on the Masculinity-Femininity (#5), Hypochondriasis (#1), and Hysteria (#3) scales. These scores were fifty, fifty-five, and fifty-seven respectively. The only scales not falling within the normal limits were the Psychopathic-Deviance scale. Four women or 57.1% of those tested received scores above the norm for the Psychopathic-Deviance scale.

The profile interpretations of the female population indicated that, like their male counterparts, the women tended to be overly self-critical and they may also admit to symptoms that are only minimally experienced. These females also experienced depression, discouragement and worry about the future and their goals. The test results indicated that they were over-active individuals who often appeared irritable and hostile towards others. There was some suggestion that they would respond poorly to psychotherapy and that the long term prognosis was generally not encouraging. Of the female population four were assessed as possibly having some schizoid tendencies. Two individuals or 28.5% of the population displayed major emotional disorders.

In terms of Macandrews addiction scale, four women or 57% of the population were assessed as having severe

addiction proneness. Two women or 28.5% of the population had moderate addiction proneness while one person or 14.2% of the women had no addiction proneness.

P.R.F.

A total of twenty patients completed the Personality Research Form. Of these, thirteen were men and seven were women. Four persons refused to take the psychological tests. Tables 9 and 10 show the mean scores for the males and females on fifteen scales.

The four highest scales for the male population were Autonomy (Au), Understanding (Un), Nurturance (Nu), and Impulsivity (Im). The four lowest scales included Social Recognition (Sr), Dominance (Do), Exhibition (Ex), and Affiliation (Af). All scales were found to fall within the normal range of forty and sixty. Although the scores distributed themselves within the normal range, the following interpretations have been made after consulting a psychologist. The average profile of the study population demonstrated that these individuals:

1) enjoy freedom from people, places and obligations; given restrictions they may try to be rebellious and break away

2) enjoy exploring areas of knowledge and inquiry; they seem to enjoy generalizations and intellectualizations if directed toward items of interest and curiosity

3) readily assist others whenever possible and enjoy helping people who are in need

4) tend to be spontaneous and act without deliberation; their impulsivity gives free vent to emotional expression

TABLE 9

MEAN SCORES OF MALE P.R.F. PROFILES

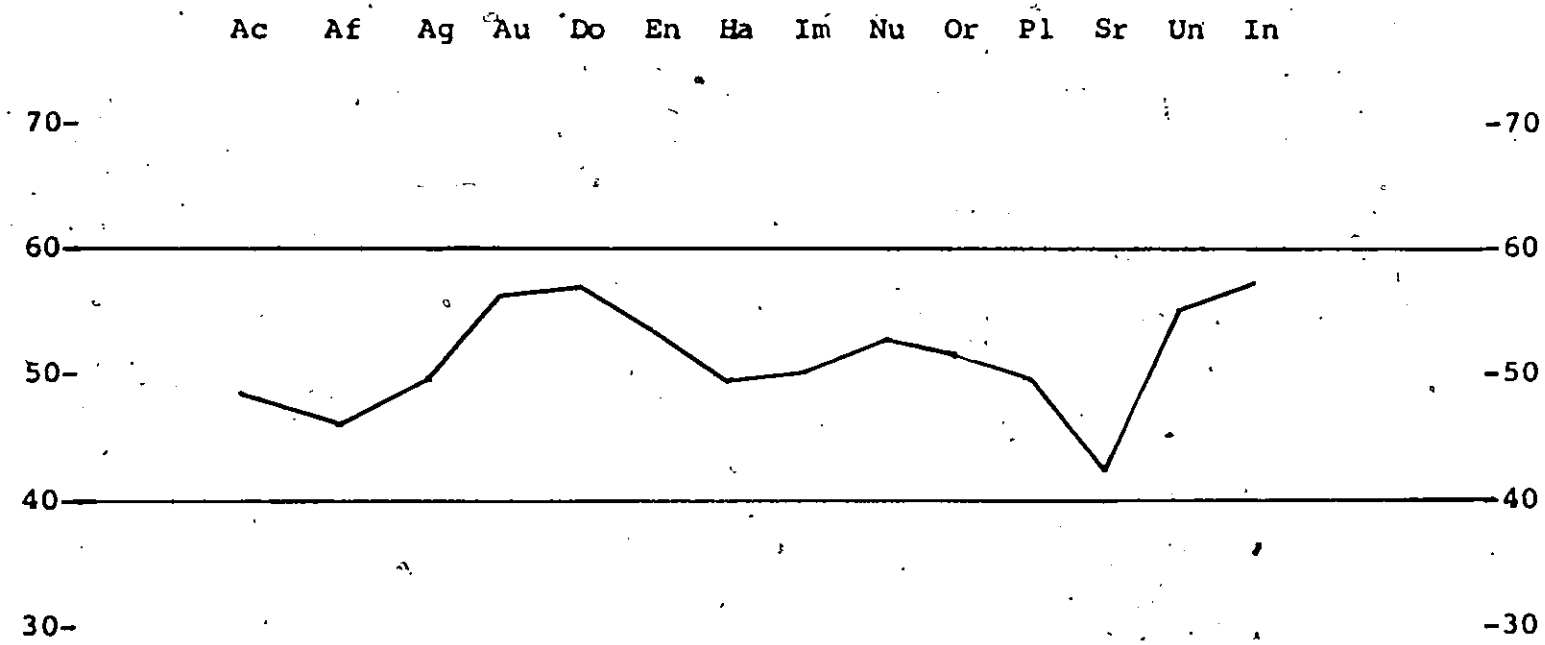
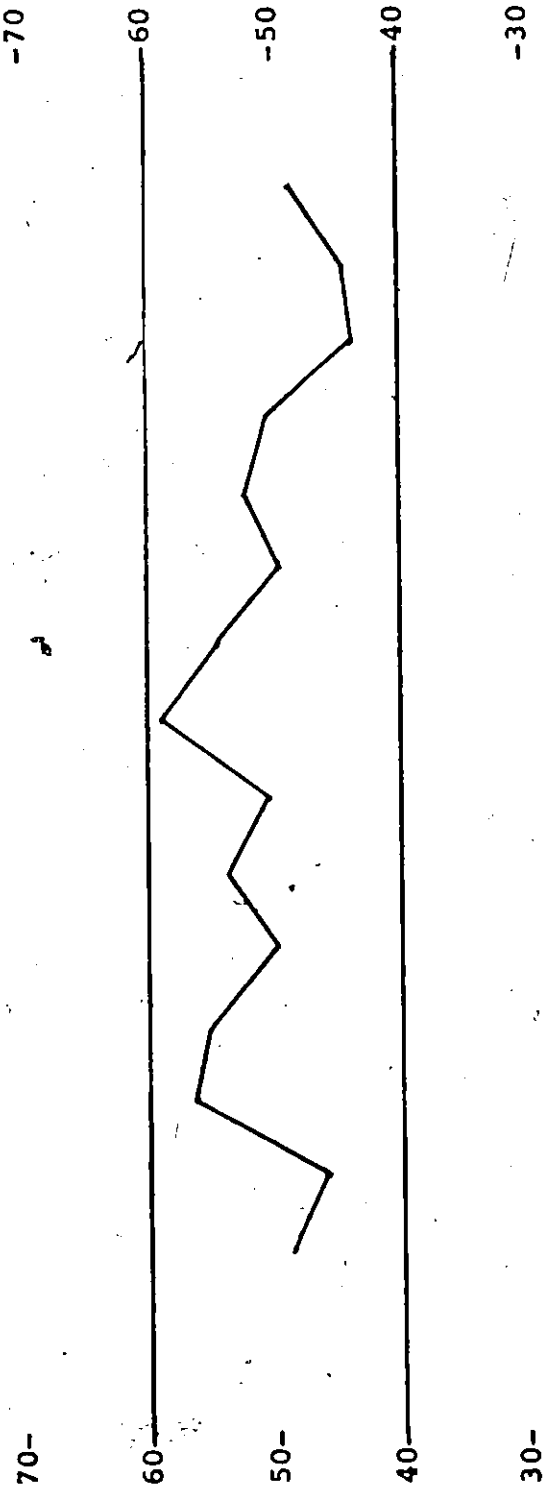


TABLE 10

MEAN SCORES OF FEMALE P.R.F. PROFILES



5) care little about status and do not seem to care about making favourable impressions on others

6) often yield to the influence and direction of others even though they express little desire to please others

7) are quiet and reserved in character and generally exude behaviour which is least likely to attract attention to themselves

8) are reserved and enjoy independence and are careful to preserve social distance when meeting new friends.

The four highest scales for the female study population were Harmavoidance (Ha), Aggression (Ag), Autonomy (Au), and Impulsivity (Im). The four lowest scales were Affiliation (Af), Understanding (Un), Social Recognition (Sr), and Nurturance (Nu). All scales for the females were found within the normal range of forty to sixty.

The following interpretations have been concluded from averaging the profiles. The profiles indicated that the females of the study:

1) maximize personal safety and will avoid dangerous situations

2) enjoy combatting through argument and generally insist on getting their own way; these individuals are easily annoyed by others and will not tolerate affronts by others

3) enjoy freedom from people, places and obligations; given restrictions they may try to be rebellious and break away

4) tend to be spontaneous and act without deliberation; their impulsivity gives free vent to emotional expression

5) are reserved and enjoy independence and are careful to preserve social distance when meeting new friends

6) accept life at face value without explanation or search for underlying motivations; thus they are concerned with practical matters rather than abstract

7) care little about status and do not seem to care about making favourable impressions on others

8) are not concerned for the feelings and problems of others; they are preoccupied with self and feel that others should do the same.

The male and female population shared some similarities in terms of impulsivity, autonomy, social recognition, and affiliation. These similarities suggest that when the population was considered as a whole, they were found to be emotionally spontaneous people who enjoyed freedom from other people and obligation, who cared little for making favourable impressions on others, and, finally, who were reserved and careful to maintain social distance with others.

The dissimilarities indicated some shifting in traditional sex role identification. The males were found to be more nurturant and sympathetic toward other people including children while the woman had little concern for the feelings of others. Secondly, the females displayed more outward aggression than their male counterparts, while the males tended to accept the direction and influence of others indicating that they preferred to follow rather than lead.

II. Analysis of Evaluative Variables

As indicated in the review of the literature, the most frequently used evaluative criteria for patients' successful rehabilitation in methadone maintenance programs were: 1) criminality, 2) employment, and 3) extraneous drug use. The researchers of the present study also chose to evaluate 4) social relationships since previous research has addressed itself minimally to the area of social interaction with significant others.

Using the criteria outlined above the researchers believed that an analysis of these criteria could reveal the degree to which the study population as a whole had or had not been successfully rehabilitated.

A. Criminality

Criminal charges were examined, after gathering the data from the self-reports of the study population (see Appendix A). The rationale for choosing criminal charges rather than convictions centered around the desire of the researchers to understand the amount of contact the addicts were having with the police rather than the actual number of convictions the courts had handed down. Charges represented to the researchers, the visibility of the addict to the law enforcement personnel of society. The interaction between the police and the addict may not have been indicative of actual criminal activity; however, to be charged is suggestive of behaviour that is considered to be suspect. Consequently

change in the number of charges could be indicative of a changing pattern of contact with the police and indirectly a decrease in criminal behaviour. The charges evaluated were placed on a continuum of offenses which the researchers compiled with assistance from a lawyer. The charges were selected on the basis of crimes characteristic of an addiction population as demonstrated by the literature. These charges were organized on a continuum from the least serious crime to the most serious crime as measured by the severity of the potential dispensation of sentence. The charges evaluated were: minor traffic violations, impaired driving, possession of drugs, theft under $200., violation of probation or parole, theft over $200., fraud, assault, and trafficking in drugs. Table 11 illustrates the number of persons charged with the offenses mentioned before and after treatment. The percentage charges that occurred from before to after treatment are also illustrated for each offense.

Prior to treatment 58.3% (14) of the patients had been charged with at least one minor traffic violation while after treatment 37.5% (9) of the study population had such a charge. The charges for the offense dropped by 37.5%.

The most outstanding changes occurred within offense categories related to drugs either directed or indirectly. The respondents reported that 45.8% (11) of them had been charged with possession of drugs before treatment; whereas only

TABLE 11

CRIMINAL CHARGES BEFORE AND AFTER TREATMENT

Offense	No. of Persons Charged		Percentage Change
	Before	After	
Minor Traffic Violations	58.3% (14)	37.5% (9)	35.7
Impaired Driving	8.3 (2)	20.8 (5)	150.
Possession of Drugs	45.8 (11)	16.7 (4)	63.6
Theft under $200.	41.7 (10)	4.2 (1)	90.
Violation of Parole or Probation	16.7 (4)	4.2 (1)	75.
Theft over $200.	20.8 (5)	(0)	100.
Fraud	8.3 (2)	12.5 (3)	50.
Assault	8.3 (2)	(0)	100.
Trafficking in Drugs	20.8 (5)	(0)	100.

16.7% (4) were charged with such an offense after treatment. Trafficking in drugs fell from 20.8% (5) to no individual charges of trafficking. Theft has been associated with drugs insofar as the addict steals to support his illicit drug dependencies. In the category of Theft under $200., 41.7% (10) of the study population reported being charged prior to treatment, while only one person reported being charged after treatment. In the Theft over $200. category, 20.8% (5) of the respondents reported charges before

treatment, whereas no one reported such a charge after treatment.

In two categories, namely impaired driving and fraud, there was an increase in the number of persons reported being charged after treatment. The former showed a 150% increase, while the latter had a 50% increase. These changes represented only minimal increases. In all other offense categories, the addicts reported a decrease in the criminal charges.

In summary, when examining criminal charges which could serve as an important measure of social rehabilitation, the addicts reported less criminal charges being laid against them in almost all categories of crime selected by the researchers for evaluation. These findings are suggestive of a decrease in criminal behaviour by the addicts since they have been in the methadone maintenance program.

Society values a crime-free state; therefore, a decrease in criminal charges could represent movement by the addicts toward one of society's strongly held values.

B. Employment

i) Income Source Before and After Treatment:

Employment source was evaluated from the self-reports of the study population (see Appendix A). The sources of income were divided according to legal and illegal categories. The researchers arrived at the income

categories, found in Appendix A, by reviewing other studies measuring legal income sources, with the additional illegal categories being arrived at through familiarity with the addicts' life styles. The income source categories represents a hierarchy that attempts to evaluate sources of income in terms of legality and the conventional social values of society. Full-time employment and unemployment insurance are both legal sources of income; however, there is less social stigma attached to one who is in full-time employment than a person who receives unemployment insurance. Given such a framework, the researchers found the following results, as illustrated in Table 12.

Before treatment 16.8% (4) of the study population reported that they earned their income solely from illegal activities, namely, theft and dealing in drugs. After treatment, no individuals reported that they were involved in theft and dealing in drugs. The data revealed that 45.7% (11) of the respondents reported that they earned their income from a combination of legal and illegal activities. After treatment, only one person reported himself in this category. The researchers evaluated only the occurrence of a combination of legal and illegal activities. No discrimination was made as to the frequency or the type of legal or illegal activities.

Before treatment, 25% (6) of the respondents reported that they earned their income through either full-time or

TABLE 12

INCOME SOURCE BEFORE AND AFTER TREATMENT

Income Source	Before	After
Full-time Job	20.8% (5)	33.3% (8)
Part-time Job	4.2 (1)	(0)
Savings	(0)	8.2 (2)
Unemployment Insurance	(0)	4.2 (1)
Training Grant	4.2 (1)	25. (6)
Welfare or Mother's Allownace	(0)	16.7 (4)
Parental and Friend's Support	4.2 (1)	4.2 (1)
Legal and Illegal Income	45.7 (11)	4.2 (1)
Theft	4.2 (1)	(0)
Dealing in Drugs	12.5 (3)	(0)
No Response	4.2 (1)	4.2 (1)
TOTAL	100.0% (24)	100.0% (24)

part-time employment. After treatment, 33.3% (8) of the study population reported that they had full-time or part-time employment.

Only one person was receiving a training grant before treatment, while after treatment 25% (6) of the respondents reported themselves in this category. Prior to methadone treatment, no addict reported that he had received welfare or Mother's Allowance. At the time of the study, the

researchers found that 16.7% (4) of the respondents reported their income as coming from welfare or Mother's Allowance.

Generally, the income sources reported by the addicts after treatment were distributed with only one exception within the legal categories of income. The categories of training grants and welfare or Mother's Allowance showed greatest increases in numbers after treatment. Within the study population, 41.7% (10) of the respondents were found in these two categories. Three more persons reported having full-time employment after treatment than before.

These results indicated to the researchers that since admission to the methadone maintenance program, the study population, as a whole appears to have legalized their sources of income. The researchers believed that once an addict was stabilized on methadone and therefore not requiring high priced, illicit narcotics, his need for a large income may have diminished. As the opiate dependency was no longer the primary focus of the addict's life, the researchers speculated that the addict may have been able to redirect his energies to employment and educational training.

In summary, the population evaluated, achieved one of the evaluative criteria for successful rehabilitation.

ii) Income Amount Before and After Treatment:

The amount of income of the study population was also chosen to cross check any change that might have occurred

in the income source. Table 13 shows the actual distribution of income amount before and after treatment on an interval scale, as reported by the addicts.

Prior to treatment, the range in amount of income was from $0 - $700. or more per month. Those reporting an income of $700. or more monthly made up the single largest category prior to treatment. Seven individuals or 29.2% of the respondents fell within the largest category. The next largest frequency occurred in the income range of $400 - $499. per month which included 20.8% (5) of the patients in the study. The mean income before treatment was $462.50, while the median was $450. per month.

After treatment, two categories were found to have the highest frequency distributions within the study population. The categories of $200. - $299. per month and $400. - $499. per month each contained 20.8% (5) of the study population respondents respectively.

The next largest category reported included 16.7% (4) of the patients, claimed that they earned $100. - $199. per month. The mean income after treatment dropped to $320.80 per month while the median fell to $250. per month.

In comparing the amounts of income before and after treatment, the researchers noted that there was a drop in the mean income of $141.70 per month and a drop in the median of $200. per month. Before treatment, 29.1% (7) of the respondents earned less than $399. per month while 66.6% (16) of the study population reported an income of $400. or

TABLE 13

INCOME AMOUNT BEFORE AND AFTER TREATMENT

INCOME AMOUNT PER MONTH	BEFORE	AFTER
$700 or more	29.2% (7)	8.3% (2)
600 - 699	4.2 (1)	(0)
500 - 599	12.5 (3)	4.2 (1)
400 - 499	20.8 (5)	20.8 (5)
300 - 399	4.2 (1)	8.3 (2)
200 - 299	16.7 (4)	20.8 (5)
100 - 199	4.2 (1)	16.7 (4)
- - 99	4.2 (1)	12.5 (3)
No response	4.2 (1)	8.3 (2)
TOTAL	100.0% (24)	100.0% (24)

more per month. After treatment, 58.3% (14) of the study population were earning less than $399. monthly, and 33.3% (8) of the respondents claimed that they earned more than $400. monthly. The data supported the previous findings regarding sources of income. As the addict population has shifted its source of income from illegal to legal activities (primarily governmental subsidies) the amount of income has fallen. The two employment variables before and after treatment served as cross checks on each other. The researchers felt that while investigating the population in terms of employment variables a cross check on such an important evaluative

criteria enhances the findings of the study.

C. Extraneous Drug Use

A further evaluative criterion in the measurement of social rehabilitation of heroin addicts on methadone maintenance programs has been the amount of extraneous drugs found in urine samples. Extraneous drug use as measured by urinalysis was a crucial variable to be investigated since it could be objectively evaluated and has not been as dependent upon how the patient population chooses to present themselves. The findings from the urinalysis represented hard data that more accurately reflected extraneous drug in the study population. Further, the results of urinalysis, provided evidence that could be compared with other studies utilizing this widely accepted evaluative technique.

Urine samples were analyzed in this study from June 4, 1974 to August 2, 1974, or a period of sixty days.

Urinalysis was able to determine the presence of heroin, amphetamines, barbiturates and methadone in the urine. For the evaluation period, 73.1% (19) of the patients in the study population abused drugs zero to five days as shown in Table 14. Another 19.2% (5) of the patients abused drugs six to ten days during the evaluation period, while 7.7% (2) of the study population abused drugs eleven to fifteen days.

TABLE 14

EXTRANEOUS DRUGS FOR SIXTY DAY EVALUATION PERIOD

DAYS OF EXTRANEOUS DRUG USE	FREQUENCY	PERCENTAGE
0-5	19	73.1
6-11	5	19.2
12-17	2	7.7
TOTAL	26	100.0

The mean number of days of extraneous drug use for the evaluation period was 4.58 days. During the sixty day evaluation period, the researchers found 120 samples had extraneous drugs present in the urine out of a possible 1,560 samples.

Table 15 illustrates the distribution of extraneous drugs used.

The most frequently abused drugs of the study population, were amphetamines which comprised 4.0% of the samples tested. Heroin was the second most frequently abused drug, while barbiturates were the least abused. During the evaluation period, amphetamines were abused 4.0% of the time, heroin 2.9%, and barbiturates .8% of the time. The total number of positive urine samples

TABLE 15

TYPE OF EXTRANEOUS DRUGS ABUSED FOR SIXTY DAY EVALUATION PERIOD

TYPE OF EXTRANEOUS DRUG ABUSED	FREQUENCY AND PERCENTAGE OF SAMPLES	
No drug	(1,440)	92.3%
Amphetamines	(62)	4.0
Heroin	(45)	2.9
Barbiturates	(13)	.8
TOTAL	(1,560)	100%

represented 7.7% of extraneous drug use for the total study population for sixty days.

In addition to reporting the frequency of extraneous drug use during the evaluation period, the researchers chose to examine the mean dose of methadone, group therapy attendance, length of treatment on the Windsor program, and their relationships to extraneous drug use. The test of association used to determine the strength of these relationships was the Pearson Product - Moment Correlation Coefficient.

Table 16 illustrates a summary of the correlations found.

i) Relationship Between Mean Dose of Methadone and Extraneous Drug Use.

Twenty-six patients were evaluated to determine the

TABLE 16

SUMMARY OF CORRELATIONS BETWEEN EXTRANEOUS DRUG USE, MEAN METHADONE DOSE, GROUP ATTENDANCE, AND LENGTH OF TREATMENT.

	MEAN DOSE	GROUP ATTENDANCE	LENGTH OF TREATMENT
Extraneous Drug Use	.10	.21	.01

strength of the relationship between the mean dose of methadone administered and extraneous drug use for the evaluation period. The correlation was found to be .10. The range of methadone prescribed during the study period was 5 mg.-90 mg. The mean dose dispensed during the study was 41.8 mg.

ii) Relationship Between Group Attendance and Extraneous Drug Use.

Group attendance records were used for the period from May, 1973 to August 2, 1974 to evaluate the relationship between group attendance and extraneous drug use. Half the study population attended group therapy sessions three times or less. The remaining 50% attended group therapy four to thirty times. The mode of group therapy was one visit, while there was a range of no visits to thirty visits.

A correlation of .21 was found between group attendance and extraneous drug use. Although a relatively weak

relationship was found, it suggested that patients with high group therapy attendance had extraneous drug use.

iii) Relationship Between Length of Treatment and Extraneous Drug Use

With a population of twenty-six patients, the researchers' investigation revealed that almost no relationship existed between the amount of extraneous drugs that were found in the patients' urine samples during the sixty day evaluation period and the length of time the patient had been treated with methadone on the Windsor program. The correlation coefficient was found to be only .01.

The length of methadone treatment ranged from twelve weeks to ninety-six weeks. The median length of treatment was 42.5 weeks.

Regarding the drug-related issues, examined in this section, the researchers did not find any single factor within the initial research focus that had a strong relationship with the frequency of extraneous drug use for the evaluation period.

In summary, the important issue of continued illicit drug abuse was examined and the researchers found that the actual percentage of the drugs were abused, was only 7.7%. This finding is meaningful since it can be compared to previous studies measuring the same variable. While a more comprehensive interpretation will be forthcoming at the end of Chapter IV, the findings of 7.7% drug abuse for the

study period, is indicative of a smaller amount of illicit drug activity than generally found in methadone maintenance programs. Mean dose, group therapy attendance, and length of treatment appeared to be only minimally related to the larger issue of extraneous drug use; however, since this project represented the seminal investigation of the Windsor program, the strength of these relationships could not have been anticipated without the benefit of prior study.

D. Social Relationships

The researchers have chosen to examine the relationships of the patients on the methadone program with their fathers, mothers, drug-related friends, and non drug-related friends. An evaluation of the social relationships the addict was experiencing with some relatives and friends was deemed important to the overall evaluation of the addict's social functioning. Criminality, employment, and extraneous drug use were evaluative criteria which were considered important externally imposed values of society; however, these values may not have been adhered to with the same reverence by the patient population. On the other hand, relationships with significant others such as parents and friends may more directly relate to the important issue of positive supportive human interaction which may affect the overall quality of life of the addict. The review of the literature revealed that social relationship issues have begun to emerge as meaningful variables. They are indicative of the quality

of the life experiences that may transpire as the addict leaves his criminal life style for the role of patient within a methadone maintenance program.

i) Relationships of the addict with his parents before and after treatment

The addict's relationships with his father, mother, drug-related friends, and non drug-related friends were evaluated in terms of frequency of visitation per month as well as the quality of relationship that existed before and after treatment. The researchers designed a five-point scale measuring the quality of relationship, reported by the addict. The points on the scale were:

5 - couldn't be better

4 - more than adequate

3 - adequate

2 - less than adequate

1 - couldn't be worse

Table 17 illustrates the frequency of contact reported by the addict with his father and mother, per month, both before and after treatment.

Before treatment, 70.8% (17) of the addicts visited their fathers as infrequently as four or less times per month. After treatment 37.5% (9) of the patients visited their fathers so infrequently. Fourteen of the addicts visited their mothers as infrequently as four or less times per

TABLE 17

FREQUENCY OF CONTACT WITH FATHER AND MOTHER, PER MONTH BEFORE AND AFTER TREATMENT

Vists Per Month	Father		Mother	
	Before	After	Before	After
10-30	8.3% (2)	37.5% (9)	16.7% (4)	45.8% (11)
5-9	20.8 (5)	25. (6)	25. (6)	20.8 (5)
2-4	33.3 (8)	16.7 (4)	33.3 (8)	20.8 (5)
0-1	37.5 (9)	20.8 (5)	25. (6)	12.5 (3)
TOTAL	100.0 (24)	100.0 (24)	100.0 (24)	100.0 (24)

month, while after treatment 33.3% (8) of the respondents were found in the four or less times monthly category.

In the five to thirty visits per month categories, 29.2% (7) of the respondents reported seeing their fathers so frequently, while after treatment, 62.5% (15) had such frequent contact. In the same categories, the researchers found that 41.7% (10) of the patients reported visiting their mothers this often, while after treatment 66.7% (16) of the addicts reported such frequent contact.

Generally, addicts were found to be visiting their parents more often per month after treatment than before. Most patients tended to redistribute into the category of ten to thirty visits per month.

[illegible]ed with the increase in contact with parents,

the quality of contact was also investigated. Table 18 illustrates the changes in quality of relationship, before and after treatment.

In terms of the quality of relationship between the addict and his father before treatment, the researchers noted that 30% (6) of the respondents indicated that they had an adequate or better relationship at that time. After treatment 65% (13) of the patients fell within the adequate or better category. Before treatment, 50% (10) of the addicts assessed their relationship with their mother as adequate or better, while after treatment the figure was 65% (13).

TABLE 18

QUALITY OF RELATIONSHIP OF THE ADDICT WITH FATHER AND MOTHER BEFORE AND AFTER TREATMENT

Quality of Relationship	Father		Mother	
	Before	After	Before	After
Couldn't be better	(0)	10% (2)	15% (3)	20% (4)
More than adequate	5% (1)	15. (3)	10. (2)	25. (5)
Adequate	25. (5)	40. (8)	25. (5)	20. (4)
Less than adequate	35. (7)	20. (4)	30. (6)	25. (5)
Couldn't be worse	35. (7)	15. (3)	20. (4)	10. (2)
TOTAL	100. (20)	100. (20)	100. (20)	100. (20)

Before treatment, 70% (14) of the respondents reported a relationship with their fathers that was less than adequate or worse while after treatment 35% (7) reported such an assessment. As for the evaluation that addicts made of their relationship with their mothers, 50% (10) had a less than adequate or worse relationship with mothers before treatment, whereas after treatment, only 35% (7) rated the relationship as this poor.

The researchers noted that the quality of relationship with both mother and father improved after treatment, however, there was a more substantial improvement in the relationship with fathers than there was with mothers.

ii) Relationship of the addict with his drug and non drug-related friends before and after treatment

The frequency of contact with drug-related friends is illustrated in Table 19. Before treatment, 95.8% (23) of the addicts reported that they visited their drug-related friends more than nine times monthly, while after treatment only 37.5% of these individuals were found in the above category. The addicts' self-reports indicated that they were in less frequent contact with their drug-related friends after they had been in treatment. The non drug-related friend category revealed a slight increase in the twenty-one to thirty visits per month category and a small decrease in the zero to eight visits per month category.

TABLE 19

FREQUENCY OF CONTACT WITH DRUG-RELATED FRIENDS AND NON DRUG-RELATED FRIENDS BEFORE AND AFTER TREATMENT

Visits per month	Drug-Related Friends		Non Drug-Related Friends	
	Before	After	Before	After
21-30	83.3% (20)	20.8% (5)	33.3% (8)	45.8% (11)
9-20	12.5 (3)	16.7 (4)	12.5 (3)	8.3 (2)
0-8	4.2 (1)	62.5 (15)	54.2 (13)	45.6 (11)
TOTAL	100.0 (24)	100.0 (24)	100.0 (24)	100.0 (24)

It is interesting to note that even though there was a decrease in visiting patterns in the addict's relationship with his drug-related friends there was not a concomitant increase in frequency of contact with non drug-related friends.

An examination of the qualitative dimensions of the addict's relationship with his drug and non drug-related friends is illustrated in Table 20.

Before treatment 20.8% (5) of the addicts reported a less than adequate or worse relationship with their drug-related friends, while after treatment, 33.3% (8) of the patients reported such a poor relationship. When evaluating an adequate or better relationship with their drug-related friends, 79.2% (19) of the respondents reported such a

TABLE 20

QUALITY OF RELATIONSHIP OF THE ADDICT WITH DRUG-RELATED FRIENDS AND NON DRUG-RELATED FRIENDS BEFORE AND AFTER TREATMENT

Quality of Relationship	Drug-Related Friends		Non Drug-Related Friends	
	Before	After	Before	After
Couldn't be better	4.2% (1)	(0)	8.3% (2)	12.5% (3)
More than adequate	16.7 (4)	16.7 (4)	8.3 (2)	25. (6)
Adequate	58.3 (14)	45.8 (11)	33.3 (8)	45.8 (11)
Less than adequate	16.7 (4)	25. (6)	29.2 (7)	4.2 (1)
Couldn't be worse	4.2 (1)	8.3 (2)	8.3 (2)	(0)
No response		4.2 (1)	12.5 (3)	12.5 (3)
TOTAL	100. (24)	100. (24)	100. (24)	100. (24)

positive relationship before treatment. After treatment, this figure dropped to 62.5% (15).

Before treatment, 37.5% (9) of the patients reported that they experienced a less than adequate or worse relationship with their non drug-related friends, while after treatment one person remained in the same category. Prior to treatment, 50% (12) of the addicts reported that they had an adequate or better relationship with their non drug-related friends. After treatment, 83.3% (20) of the patients

reported themselves to have an adequate or better relationship with these friends.

Generally the patients were found to have a less than adequate relationship with their drug-related friends after treatment and a better relationship with their non drug-related friends. There was a greater improvement in the quality of the relationship between the addict and his non drug-related friends than was reported between he and his drug-related friends. When examining the frequency of contact and the quality of relationship exhibited between his friends and himself before and after treatment, the researchers found that even though there was a slight increase in frequency in contact with non drug-related friends, there appeared to be a substantial increase in the quality of relationship with these friends. Conversely, although the frequency of contact with drug-related friends dropped off substantially, the quality of relationship reported by the addict dropped only minimally.

iii) Drug Dependencies criminal activities and receipt of consistent and legal income by relatives and friends before and after treatment

The researchers of this study, believed that the same evaluative criteria used to assess the addicts could be applied to their relatives and friends as well. Since there has been no research evaluating the relationship of the addict to his significant others, in terms of these variables the researchers believed such an investi-

gation might be beneficial to a broader knowledge in the area of methadone treatment. The researchers found that almost no drug dependencies, criminal activities or illegal sources of income were reported for fathers, mothers, sisters, grandparents and inlaws of the addicts. Drug use was most frequently reported for the brothers and lovers of the addicts. Of those responding to the inquiries related to drug issues 33.3% (8) of the addict's brothers were involved in drugs while 66.7% (16) of the lovers were using drugs. Likewise in the area of criminality, the same two categories, brothers and lovers were noted as having some criminal involvement. With respect to criminal activity, 20.8% (5) of the brothers were involved, while 50% (12) of the lovers were reported in the above category.

Before treatment, 20.8% (5) of the patients reported that their lovers had an illegal source of income and 95.8% (23) of their drug-related friends were reported as having an illegal source of income. Approximately 33.3% (8) of the addicts non drug-related friends earned their income illegally as well. Of the lovers assessed, after treatment, only one lover was reported as having an illegal source of income, while 79.2% (19) of the drug-related friends were still receiving monies from illegal sources.

When the areas of frequency and quality of relationship with relatives and friends was evaluated with drug dependencies, criminal activities and illegal sources of

income, the researchers discovered that some of the incidental findings of the methadone study could contribute to a fuller understanding of the initial research questions.

III. Incidental Findings

In addition to the purpose and focus of the study as outlined in the research design, several incidental findings were found to have existed between the quality of relationships of the addicts with their drug and non drug-related friends and two of the three initial evaluative criteria.

The strength of the relationships existing was measured using the Pearson Product-Moment Correlation Coefficient. With respect to the extraneous drug use by the patients on the Windsor program there existed a relationship between extraneous drug use and the quality of relationship reported after treatment with drug-related friends. The correlation was .58. This seems to suggest that as the quality of the relationship of the patient with his drug-related friends improved, the frequency of extraneous drugs found in the patient's urine increased. Conversely, as there was a qualitive improvement in the relationship of the addict and his non drug-related friends there was a decrease in extraneous drug use. The correlation between the two variables was .45.

In evaluating the relationship of crime with drug and non drug-related friends, two separate relationships occurred. The first finding indicated that as the relation-

ship with non drug-related friends improved there was a concomitant increase in the criminal activity of the addict. The strength of the correlation was found at the .41 level. Conversely, as the relationship between drug-related friends and the patient improved there was a decrease in crime. The strength of the correlation was found to be at the .48 level. Since the researchers found that drug use escalated with an improvement in the relationship of drug-related friends, the researchers measured extraneous drug use by crime to determine if there was any association between the two variables. The strength of the association between these two variables was at the .35 level indicating that as there was an increase in extraneous drug use, there was a decrease in criminal activity by the patients on the Windsor program.

IV. Summary of Demographic Variables

In summary, an evaluation of the demographic variables of the study population revealed that the patients being treated at the Windsor Western Hospital Centre's methadone clinic were younger than the methadone patients evaluated by Chambers et al., Moffett et al., Narcotic Addiction Foundation of British Columbia and the Addiction

Research Foundation of Toronto, Ontario.[183, 184, 185, 186] These studies reported having addict populations with mean ages thirty years and over, while the Windsor study population had an age range of only eighteen years to twenty-nine years with mean age of 24.1 years. Such a finding was considered important by the researchers since it indicated that the Windsor study population was comprised of addicts who, by virtue of their youth, were not long-term heroin addicts. The youthful addict may require a different treatment orientation than the hardcore, long-term criminal addict. Since many of these addicts were treated at a younger age than the other study populations, the results of the study need to be interpreted with the age difference in mind. Possibly, successful treatment at an early stage could be a function of methadone maintenance interacting

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[183] C. Chambers and W. Taylor, "The Incidence and Patterns of Drug Abuse During Maintenance Therapy," in Methadone: Experiences and Issues. Ed. by C. Chambers and L. Brill (New York: Behavioral Publications, 1973), pp. 121-129.

[184] A. Moffett, I. Soloway, and M. Glick, "Post Treatment Behavior Following Ambulatory Detoxification," in Methadone: Experiences and Issues. Ed. by C. Chambers and L. Brill (New York: Behavioral Publications, 1973), pp. 215-227.

[185] L. Brill, "The International Experience: A Survey of Maintenance Programs," in Methadone: Issues and Experiences. Ed. by C. Chambers and L. Brill (New York: Behavioral Publications, 1973), pp. 327-346.

[186] M. Krakowski and R. Smart, Evaluation of Methadone Treatment, p. 8.

with a younger, more motivated population who are not as deeply entrenched in a criminal life style.

The ratio of males to females in the Windsor study was approximately 2½ to 1. The ratio found in the study was not unusual in comparison to other studies; nor were race, religion, marital status and residence. The study population was educated with a modal level of educational achievement of grades nine to eleven. The patients achieving grade thirteen or less represented 66.7% (16) of the patients. The educational finding was in accord with that of the Toronto study in which completion of grades ten to eleven was achieved.[187]

In comparison to other psychological test results, the Windsor results produced similar psychological profiles. The Minnesota Multiphasic Personality Inventory profiles of both male and female patients were similar to those of methadone population studied by the Addiction Research Foundation in Toronto, Ontario.[188] The two highest scales for both studies were Psychopathic-Deviance and Schizophrenia. The Personality Research Form results revealed an impulsive, rebellious nature in many of the patients which could give support to the psychopathic-deviant tendencies of the study population. The psychological tests revealed no outstanding

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[187] Ibid.

[188] Ibid., pp. 18-19.

differences from other findings thereby suggesting that the Windsor study population had a similar psychological make-up to other study populations found in the literature.

In conclusion, the Windsor study agrees with the findings of Chein's New York study[189] that many of the young heroin addicts found in the Windsor program are suffering from deep-seated, serious psychological problems as measured by the M.M.P.I. The profiles found in this study were similar to those of the Toronto study.[190] On the basis of the psychological testing completed in Windsor, Toronto, and in the New York studies, there was strong suggestion that heroin addicts were persons with serious emotional problems.

Lawrence Kolb has suggested that of the addicts he studied, most had been suffering from some psychological problems before becoming addicted.[191] The difficulties the researchers had in interpreting the psychological results in terms of causality was in part due to the lack of testing prior to addiction. Without previous testing, it would be difficult to categorically state whether psychological difficulties preceded the addiction or vice versa.

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[189]Chein, Road to H., pp. 192-226.

[190]M. Krakowski and R. Smart, Report on the Evaluation of the Narcotic Addiction Unit's Methadone Maintenance Program. Substudy No. 429 of the Addiction Research Foundation (Toronto, Ontario, 1972), p.

[191]Schur, Narcotic Addiction, pp.36-7.

Most of the addicts were admitted to the program after being referred by their friends or their family doctor, indicating that some credibility for the program existed in the opinions of the medical profession and the addict's friends. Prior to current methadone treatment, the addict received chemical maintenance or withdrawal treatment more frequently than the other modalities were used in the treatment of heroin. Treatment took place generally in private medical offices, public medical clinics, and hospitals. Psychiatrists and medical doctors were the most popularly consulted professionals. The patients studied in the Windsor program reported data that indicated a preference for medically oriented treatment providing substitute drugs for their heroin dependencies.

V. Summary of Evaluative Variables

The review of the literature initially guided the researchers to evaluate three major criteria utilized in assessing the level of social rehabilitation of heroin addicts receiving methadone maintenance treatment. A fourth criteria measuring successful social rehabilitation examined the quality of relationships existing between the addict and his relatives and friends. The relationship variable was not consistently found within the review of the literature, however, there appeared to be a recent trend to evaluating issues related to relationships within

the addict's life.

Through the addict's self-reports, the researchers gathered data on two evaluative variables concerning the addict's criminal charges, and employment source and income amount.

In addition to the self-reports, urinalysis was carried on for a sixty day period to examine the third variable, namely the extraneous drug use of the study population. Self-reports were also utilized to gather data on changing frequencies of contact and quality of relationships experienced by the addict with his relatives and friends. These friends and relatives were also evaluated to ascertain their criminal involvement, employment status and drug dependencies.

A. Criminality

The most outstanding changes reported by the patients, in the area of criminal charges, were directly related to possession and trafficking in drugs. Crime dropped at least 63.6% in the drug-related categories. Theft over and under $200. dropped by at least 90% as well after treatment. The researchers speculated that once an addict has been stabilized on methadone, his need for heroin diminishes and the criminal behaviour, associated with procuring these illicit drugs, would no longer be functional for him.

A Toronto study, conducted by the Addiction Research Foundation, found that there was a decrease in charges laid in the areas of possession and/or trafficking in narcotics after treatment while there was more than a 50% increase in criminal charges in the areas of breaking and entering, and theft.[192] The Windsor study results did not find a corresponding increase in these offense categories. Possibly the younger addicts found on the Windsor program were involved in crime as it related to a need for drugs; therefore, once the drug was legitimately supplied crime was no longer necessary. The older addicts on the Toronto program may have been more involved in the criminal life style, suggesting that they were reticent about giving up established criminal activities even though their methadone treatment no longer necessitated such behaviour.

The researchers experienced difficulty in comparing criminal charges with other study results, as some studies used arrest histories, convictions, or criminal charges. Since many of these studies did not report the actual crimes being committed, the researchers were not certain which criminal charges decreased in the studies. For example, Dole's and Nyswander's study of 750 criminal addicts reported that 88% of the patients showed arrest free records

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[192] M. Krakowski and R. Smart, Evaluation of Methadone Treatment, pp. 13-15.

after treatment; however, which specific crimes were reduced was difficult to ascertain.[193] In attempting to match for age, sex and education, the researchers had difficulty in finding matched study populations when investigating criminality.

In comparing the addict against himself before and after treatment, the researchers found that in terms of criminal charges most frequently laid against the patients at the Windsor clinic, crime has been reduced in all areas except impaired driving and fraud. By comparing the addict against himself, the researchers noted that since these patients have been participating in the Windsor program, they have begun to show important gains in terms of one of the most frequently utilized measure of social rehabilitation found in the literature:

B. Employment

The patients evaluated in the study were found to have made significant changes in their sources of income. Prior to treatment, 62.5% (15) of the addicts reported that they were earning income from a totally illegal or partially illegal source, while after treatment only one such person reported himself in the illegal category. Wieland and

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[193] V. Dole, M. Nyswander, and A. Warner, "Successful Treatment," Journal of the American Medical Association, pp. 2708-2711.

Chambers, in evaluating thirty-two addict patients, found that 56.3% (18) of their study population had illegal sources of income before treatment. No person had an illegal source of income after treatment.[194] These findings were comparable to the results of the Windsor study. The results further indicated that there was little increase in the categories of either full-time or part-time employment after treatment. The most outstanding shift in income source was from the illegal and legal income category to the training grant and social assistance categories.

Because methadone takes away the narcotic hunger, the amount of money needed prior to treatment could diminish once the addict was stabilized on methadone.

The researchers believe that the cessation of drug seeking behaviour and the illicit criminality associated with heroin addiction allowed new freedoms to the patients in treatment. The opportunities open to these individuals in terms of employment may have been diminished because of the social stigma associated with being an ex-junkie. The Government of Canada through its Manpower Centres has been active in Windsor in encouraging many of the applicants seeking employment, to consider training grants. These grants provided a weekly salary to the patient while simultaneously teaching them skills related to procuring

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[194] W. Wieland and C. Chambers, "A Comparison," Methadone, pp.100-101.

future employment.

The results of the Windsor study were similar to those found in the Toronto study conducted by A.R.F. In Toronto, 66.7% of the patients were working or receiving a training grant, while in Windsor it was 58.3% (14). The Toronto study also noted an increase in the number of addicts on social assistance programs after treatment.[195]

In evaluating the amount of income, the researchers noted that before treatment 66.7% (16) of the patients earned more than $400. monthly, while after treatment only 33.3% (8) of the patients still remained in these income brackets. The finding was to be anticipated in view of the addict's stability on methadone and subsequent shift to a legal source of income. The researchers postulated that self-improvement through educational upgrading becomes possible once the addictive life style is not the primary focus of the patient's life. The shifts found in the study from illegal sources of income to legal sources were indicative of positive movement with respect to an important evaluative variable in methadone maintenance research.

C. Extraneous Drug Use

The amount of extraneous drug use present in the

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[195] M. Krakowski and R. Smart, Evaluation of Methadone Treatment, pp. 10-11

urine samples for a sixty day period, in the Windsor program, occurred 7.7% of the time. Only 120 urine samples out of 1,560 samples showed any traces of heroin, amphetamines, or barbiturates. The drugs most frequently abused in this program were amphetamines 4.0%, heroin 2.9%, and barbiturates .8% of the time.

In contrast, Chambers and Taylor found in their Philadelphia study, that extraneous drugs were present in the urine 58.9% of the time. Heroin was abused 35.5% of the time, barbiturates 11.5% and amphetamines 14.4% of the time.[196]

In Bowling's study which examined both high and low doses of methadone with respect to extraneous drug use, it was found that after one year of treatment, the patients were abusing amphetamines 58.6% of the time, heroin 55.2% and barbiturates 23.2% of the time for the high dose program. The low dose program results reported a change in the percentage as well as the type of drug abuse. Heroin became the most frequently abused drug, being used 67.1% of the time, amphetamines 51.3% and barbiturates 10.5% of the time.[197]

After one year of treatment or more, the Addiction Research Foundation in Toronto found that drugs were abused

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[196] C. Chambers and W. Taylor, "The Incidence of Drug Abuse," Methadone, pp. 122-123.

[197] C. Bowling, A. Moffett and W. Taylor, "High versus Low Dose," Methadone, pp. 143-148.

11.9% of the time in a population of thirty-nine patients. Amphetamines and barbiturate abuse occurred 2.6% and 4.4% of the time respectively.

The differences in findings between the Toronto and Windsor studies in terms of the overall percentage of illicit drug use was 4.2%. The Toronto study found that the most frequently abused drug was amphetamines.[198] The researchers believed that because of the many variables interacting in the study populations such as length of treatment, mean dose, street or availability of drugs, comparison of test results was difficult. The incidence of less drug abuse in the Windsor study could have several explanations. The researchers felt that because the sixty day evaluation period was a new experience for the patients, they may have been unsure of the implications of the test results, insofar as these results related to their continuation on the program. In addition there was no supervision to the new testing procedure at the time of gathering the urine samples; therefore, bogus urine samples could have been introduced into the evaluative system, thereby reducing the frequency of extraneous drug use reported. The researchers were made aware by several addicts in the study that illicit drugs were not always available in the city

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[198] M. Krakowski and R. Smart, Evaluation of Methadone Treatment, pp. 37-40.

of Windsor, during the evaluation period. Some addicts reported that amphetamines were in greater abundance and cheaper than any other drugs. If the lack of availability of drugs within Windsor was operating, then the overall incidence of illicit drug use may have been underrepresented.

In reviewing the literature on extraneous drug abuse, the researchers found a wide range in frequency of drug abuse and preferred drug abused. Many of the American studies reported that when urinalysis was implemented, measuring heroin, barbiturate and amphetamine use, some drug use of the types mentioned was found upward of 20% of the time. Compared to the Windsor study results and those of the Toronto study, the overall illicit drug activity was consistently lower in Canadian than in the American studies. The difference in findings between the Canadian and American studies was not completely understood by the researchers. Despite the lack of an adequate explanation of the differences found, the researchers believed that in terms of one of the major evaluative criteria, namely, extraneous drug use, the Windsor program had less incidence of continued illicit drug use than was found in the majority of studies reviewed in the literature.

D. Social Relationships.

An evaluation of the social relationships, which the addict reported to the researchers, revealed that the

respondents experienced improved social relationships with both their fathers and mothers. The increased frequency of contacts per month and the improved quality of these contacts after treatment was indicative of improved social relationships with two significant persons in the life of the addict. The researchers believed that because the addict was no longer as involved in criminal and drug-related activity, he was more able to develop improved relationships with his family. As well, the family may have been more open to relating to their sons and daughters once they were outside the drug subculture and within a treatment setting. The researchers further speculated that, given a reduction of criminal and drug seeking behaviour on the part of the addict, he would have more free time available to pursue more satisfying social relationships with his parents.

In terms of the addict's social relationships with drug-friend, the study revealed that although there was a marked decrease in the frequency of contact, with these friends, the quality of the relationship did not decrease. The researchers believed that the addict could have desired less consistent contact with his drug friends after he was in treatment, because he wanted to escape from a particular subculture that condoned continued drug use. The researchers suggested that due to the long associations with drug-related friends and the subsequent difficulty in readjusting

to society, the addicts were careful to maintain the quality of the relationship with their drug friends so as not to experience total isolation.

Similarly, the researchers found a marked increase in the quality of the relationship reported with non drug-related friends while the frequency of contact was only slightly increased after treatment. Possibly the addicts were desirous of establishing relationships with non drug-related friends; yet, they were not reporting increased contact with that group of individuals. The caution in the period of transition indicated by the data may have suggested the difficulty patients had in seeking a satisfactory relationship outside the drug culture.

The researchers believed that the findings of the Windsor study were suggestive of the observation that the patients on the program were less isolated from parents after treatment. Since the addicts reported that their parents were not involved in criminality, drug dependencies or receiving money from illegal sources, increase contact may be indicative of the addict's willingness to become more identified with the values of his parents. The results of the psychological testing have indicated that these patients were generaly passive and would rather follow someone than take on the role of leader. The researchers suggested that if the patients were followers, their behaviour could be patterned after those persons with whom

they had regular contact. Some support, from the incidental findings was present for the above premise.

A relationship was found to exist between increased contact with non drug-related friends and increased criminal charges of the patient. Since 33.3% of the non drug-related friends earned their income illegally, the researchers speculated that the increased contact with non drug-friends may have been influential in redirecting them to criminal endeavours. On the other hand, a relationship was found between an increase in the quality of relationship with these non drug-related friends and a decrease in the extraneous use of drugs by the patients.

A negative correlation was found to exist between crime and extraneous drug use. If extraneous drug use increased, criminal charges were found to decrease. The researchers did not expect to find such an association between crime and extraneous drug use.

The improvement in the quality of relationship with parents may be the avenue to improved social functioning without criminal or drug activity. The relationship to friends, on the other hand, seemed to leave the addict open to either criminal associations or drug use.

CHAPTER V

SUMMARY AND CONCLUSION

The purpose of the research project was to describe and evaluate the population of heroin addicts being treated at Windsor Western Hospital Centre, Methadone Maintenance Clinic. The clinic began to operate on September 9, 1972. Dr. Walter Cassidy, a local psychiatrist who founded the clinic, had taken a personal interest in the treatment of heroin addiction. The clinic was a private program operating within a public hospital setting with an additional staff member from the Addiction Research Foundation providing further group therapeutic treatment to the patient population. The researchers chose to investigate the entire clinic population who had begun treatment on or before April 30, 1974. The cut-off date allowed for at least one month of treatment for clinic patients before the data collection commenced.

The rationale for investigating the study population centred on the following reasons. The methadone program was the only specialized form of treatment for heroin addicts for the local tri-counties of Essex, Kent, and Lambton. Secondly, Canadian research into the area of methadone maintenance was limited. Because the Canadian literature and Canadian programs were few in number, a Canadian study

would contribute to the literature.

Finally, the program at Windsor Western Hospital Centre had never been evaluated. A systematic collection of data was believed to be necessary to evaluate objectively several dimensions of the program. The need for such evaluative research was recognized by the clinic director, hospital administration, and by the group therapist from the Addiction Research Foundation, the latter being one of the authors of this study.

The description and evaluation of the patients of the Windsor Western Hospital Centre's methadone program was twofold. The study examined demographic variables such as age, sex, residence, nationality, religion, marital status, education, recreational activities, referral source, methods of past treatment, past treatment setting, past profession treating and psychological profiles. The demographic variables of the study were considered important in describing the characteristics of the study population evaluated. In Canada, few studies have been completed on methadone clinics, consequently a descriptive picture of the study population could serve as a comparison for future research of both the Windsor population and other studies throughout Canada. Additionally, the demographic data was considered important since it could provide some explanation for the findings related to the evaluative criteria.

The Windsor Western Hospital Centre's methadone program was evaluated in terms of the patients' criminal

charges, employment, and social relationships before and after treatment. The fourth variable, extraneous drug use, was measured through urinalysis for a sixty day evaluation period.

The four evaluative criteria were utilized to assess the social rehabilitation of the study population. Three of the four criteria, namely, crime, employment, and extraneous drug use have been used extensively in the evaluation of program effectiveness of methadone maintenance in the treatment of heroin addiction. The fourth variable, social relationships, was mentioned in the more recent literature on methadone maintenance. The relationship variable provided an assessment of an area that may directly affect how the addict experienced an important dimension of his environment. Generally, past literature has evaluated success in treatment from society's point of view only. The addition of social relationship to evaluative studies could initiate a focus on the needs of the addict rather than solely on the needs of society.

I. Summary of Findings

The population in the study of the Windsor methadone program consisted of seventeen males and seven females, ranging in age from eighteen to twenty-nine. The mean age for the patients was 24.1 years. The patients were generally undereducated. The educational mode was from grade nine to eleven. The population was Caucasian with the exception of

one Negro. Approximately 50% of the study population were either married or in a common-law relationship, while the remaining individuals were either separated, single or divorced. The psychological profiles from the Minnesota Multiphasic Personality Inventory (M.M.P.I.) revealed that approximately 50% of the study population were suffering from major emotional disorders. These individuals appeared to be impulsive and rebellious, as reflected in high scores for Psychopathic-Deviance and Hypomania. They also scored high on the Schizophrenia scale. The Personality Research Form (P.R.F.) results supported those of the M.M.P.I. The P.R.F. scores further revealed that these patients were autonomous and tended to be inner-directed individuals.

More than 50% of the addicts were referred to the program by their family doctor or a friend on the program. Prior to being referred for treatment, the patients on the Windsor program were most frequently treated through chemotherapy maintenance withdrawal by psychiatrists or family doctors at hospitals, private medical offices and public medical clinics.

An analysis of the evaluative criteria, namely, crime, employment, extraneous drug use and social relationships, indicated that the study population:

1) exhibited a decrease in criminal offenses in all areas evaluated except impaired driving and fraud

2) manifested a shift in income from illegal sources to legal sources in all but one case

3) maintained a drug free status, as measured by an analysis of urine for heroin, amphetamines and barbiturates, 92.3% of the time

4) improved the quality of contact and frequency of contact with their parents and non drug-related friends, after treatment.

These major findings indicated that the study population has achieved a measure of success in terms of social rehabilitation after an average period of time on the program of 42.5 weeks.

More specifically, after treatment, the researchers found that crime, which is often associated with illicit drug use, directly or indirectly had a negative association with extraneous drug use in the Windsor study. The researchers found that as extraneous drug use increased, crime decreased. After treatment, the researchers suggested that crime was no longer a behaviour directed at acquiring money to purchase drugs. Given the reduced need for monies for purchasing illicit drugs, the researchers found that drug-related offenses decreased in frequency. After treatment, the four offenses commonly associated with illicit drug use dropped off at least 20%. In terms of all areas evaluated, the most outstanding decreases in criminal charges were in the offense categories of possession and trafficking in drugs, as well as theft over and under $200. The researchers found, however, that although crime has decreased after the addicts have been in treatment, the addict having a better relationship with non drug-related

friends was found to be associated with increased criminal involvement. Since 33.3% (8) of the addict's non drug-related friends were criminally involved after the addict's admission to the Windsor program, the researchers believed that the qualitative improvement in the relationship existing between the addict and his non drug-related friends may influence the patient's involvement in crime. The researchers believed that although an association existed between the addict's improved relationships with non drug-related friends and increased crime, the overall frequency of criminal charges decreased as did the severity of the crimes committed after treatment.

The patients participating in the Windsor program reported that they received monies from totally illegal or partially illegal sources 62.5% of the time before treatment. After treatment, the patients' sources of income were reportedly legal 95.8% of the time. While there was little increase in the full-time and part-time categories, the major increase occurred in the categories of training grants and social assistance.

Before treatment, these patients may have been dependent on society, through illegal activities, at the expense of the citizenry. Since treatment, they remain dependent on society through their eligibility for social assistance and training grants.

While receiving monies from a social welfare source may not be a totally accepted value of society, it is pre-

ferable to criminality.

Heroin, barbiturates, and amphetamines were abused 7.7% of the time by the study population. In order of frequency of abuse, the drugs were: amphetamines 51.7%, heroin 37.5%, and barbiturates, 10.8% of the time.

Drug abuse on methadone maintenance programs generally has been reported to be over 20%. The Windsor program results indicated a much lower level of extraneous drug abuse when compared to the findings of other studies. The researchers found that in terms of extraneous drug use, there appeared only minimal correlations between presence of extraneous drugs in the urine samples and mean dosage of methadone, length of treatment, and group therapy.

The addict's social relationships with his relatives and non drug-related friends improved in both frequency and quality, after treatment. Improved social relationships with the addict's parents may have occurred because the addict was no longer involved in drug abuse and criminality. Since the addict reported that his parents generally were not involved in criminal activities, drug dependencies and receipt of illegal incomes, the researchers felt that these parents could provide a socially acceptable adult figure for the addict to identify with. The researchers believed that the values of the parents could offer a life-style that was in sharp contrast to the drug subculture.

The addict's social relationships with drug-related friends decreased in frequency of contact, nevertheless the

quality of relationship remained essentially the same. Conversely, the addict's relationship with his non drug-related friends improved in quality while the frequency increased only slightly.

The researchers speculated that the addict wanted contact with both sets of friends, although in a period of transition from drug to non drug-related friends, the struggle of the addict's changing values made it difficult for him to completely feel accepted or identify with either group.

II. Limitations of the Study

The limitation of the population-descriptive study was the inability to test hypotheses through the use of an experimental design. Since no pretest existed, for the study population, analyzing the variables could not be compared against those of an earlier test. The researchers were not able to gather initial baseline data that facilitated a description of the patients in treatment at the Windsor Western Hospital Centre Methadone Maintenance Clinic. The scope of the study was therefore largely restricted to evaluating the self-reports of the patients. The patient's information gathered was taken at face value; therefore, the possibility of erroneous results was considered. The researchers felt that when evaluating criminal behaviour and relationship factors with friends and relatives, caution was required while interpreting the results in these sensitive areas. When direct, undisguised questions were

used to measure these areas, the patients could clearly see what the socially approved answer should have been. Since cross-checking was not generally carried out, the researchers could never be certain as to the veracity of the responses elicited. The urine samples taken were unsupervised during the evaluation period; therefore, some bogus urines might have been found in the total sample. Some addicts suggested that illicit drugs were unavailable in the street at the time of the study. If an illicit supply was markedly reduced during the sixty day evaluation period, the extraneous drugs present in the urine may have been artifically reduced because of drug scarcity. Since daily urinalysis was implemented for the first time on a compulsory basis, the patients could have reduced their drug intake for the evaluation period because they may have feared expulsion from the program.

Of the entire population in the Windsor program, three persons refused to cooperate with the study. Two of those refusing were considered by the program staff as being the most antisocial of the patients in treatment. The absence of these individuals in the study population may have skewed the study results, as the remaining individuals were largely cooperative in helping in the research project.

III. Further Study

The researchers recommend that a follow-up study be conducted for these individuals in six months to one year.

The questions of extraneous drug use, criminal behaviour, employment status, and social relationships require further investigation. The psychological status of these patients could be reevaluated to ascertain whether the program has been effective in helping the addict adjust to a state of improved mental health.

Further study is needed to explain adequately the phenomenon of increased criminality with decreased extraneous drug use and a more qualitative relationship with non-drug friends. The researchers believe that the addict's experience of methadone treatment could provide valuable information in altering the program to meet their legitimate needs for treatment. Most of the evaluative work completed on methadone maintenance programs has considered "success" in terms of societal values, while ignoring the quality of life issues of those in daily attendance at programs throughout the United States and Canada. The researchers are further convinced that fewer studies concentrating on dosage levels, criminality, and employment should be conducted. Instead studies investigating methods to improve the psychological and social functioning of heroin addicts may provide valuable information contributing to a more comprehensive delivery system that takes into account not only societal expectations but also the needs of the patient.

Fruitful research should be directed to understanding the transitional implications in adjusting to the role of patient after having been a deviant within a subculture.

Methadone research should not only be evaluated in terms of criminality, extraneous drug use, and responsible employment, but it should also focus on the most effective methods in assisting the heroin addict to reach a state of responsible self-direction, thus enabling him to experience the socially approved rewards of society.

The researchers feel that without these relationship skills, access to the social rewards of our society seem a remote possibility for these individuals. Research directed at the discovery of methods that may enhance social and psychological functioning could provide the existing state of methadone research with an important dimension further enabling a greater level of rehabilitation, The study has shown the effectiveness of methadone therapy in terms of the traditional values of society. The quality of life for the addict treated has improved in the areas of reduced criminality, reduced drug abuse, and minimizing the receipt of monies from illegal sources. However, the addict is still experiencing severe psychological and social relationship problems. Treatment now needs to broaden its focus to address itself to establishing effective approaches that can help the addict move beyond the attainment of no crime, no drugs, and stable employment to a state of psychological contentment achieved through healthy social interaction. These skills may hopefully give some autonomy to the pursuit of the addict's choice of a socially accepted goal.

APPENDICES

APPENDIX A

METHADONE MAINTENANCE QUESTIONNAIRE
OF SOCIAL VARIABLES PERTAINING TO
PATIENTS IN TREATMENT

NAME _____ (LAST), _____ (FIRST), _____ (MIDDLE)

ADDRESS _____ (NO.), _____ (STREET), _____ (CITY), _____ (APT. NO.)

TELEPHONE NUMBER ____-_____

A. QUESTIONNAIRE NUMBER ____ (1 2) A

B. AGE ____ (3 4) B

C. DO YOU AT PRESENT:

(1) own your own home.
(2) rent home
(3) rent apartment
(4) board
(5) live with parents
(6) live with friends
(7) live with relatives
(8) other (specify _____)
(9) no response

____ (5) C

D. SEX

(1) MALE, (2) FEMALE

____ (6) D

E. NATIONALITY

(1) Canadian
(2) American
(3) Other
(9) No response

____ (7) E

F. RACE

(1) Caucasian
(2) Negroid
(3) Mongoloid
(9) No response

F ____ 8

G. MARITAL STATUS

(1) Single (5) Widowed
(2) Married (6) Common-law
(3) Separated (9) No response
(4) Divorced

G ____ 9

H. RELIGION

(1) Protestant
(2) Catholic
(3) Jew
(4) Other
(9) No response

H ____ 10

I. EDUCATION (last grade completed)

(01) 0-5 years
(02) 6-8 years
(03) 9-11 years
(04) 12-13 years
(05) trade, training after grade 8 or 12
(06) Community College, 1 year
(07) Community College, 2 years
(08) Community College, 3 years
(10) University, 1 year
(11) University, 2 years
(12) University, 3 years
(13) University, 4 years
(09) No response

I ____ 11 12

J. WHAT WAS YOUR SOURCE OF INCOME PRIOR TO TREATMENT AND WHAT IS IT AT PRESENT?

(01) full-time job
(02) part-time regular
(03) U.I.C. or Vocational Rehabilitation
(04) Training Grant
(05) Seasonable Employment
(06) Welfare or Mother's Allowance
(07) Parental Support
(08) Friend's Support
(10) Illegal and Legal Income
(11) Theft
(12) Dealing
(13) Savings
(09) No response

Before Treatment ____ 13 14 After Treatment ____ 15 16

J

K. WHAT WAS THE PAST MONTHLY AMOUNT OF YOUR INCOME PRIOR TO TREATMENT AND WHAT IS IT PRESENTLY?

(0)	0-99	(5)	500-599
(1)	100-199	(6)	600-699
(2)	200-299	(7)	700 or more
(3)	300-399	(9)	No response
(4)	400-499		

Before Treatment _____ (17) After Treatment _____ (18) K

L. WHAT WAS THE LENGTH OF SERVICE IN THE JOB PRIOR TO TREATMENT AND WHAT IS THE LENGTH OF SERVICE IN YOUR PRESENT JOB IN MONTHS?

(0)	0-2	(3)	9-11
(1)	3-5	(4)	12 or more.
(2)	6-8	(9)	No response

Before Treatment _____ (19) After Treatment _____ (20) L

M. WHAT SPECIFIC CHARGES HAVE BEEN LAID AGAINST YOU, IF ANY, AND STATE THEIR FREQUENCIES BOTH PRIOR TO AND SINCE TREATMENT BEGAN. Nine or more are recorded as 9.

Before Treatment		After Treatment
_____ (21)	Minor Traffic Violation	_____ (33)
_____ (22)	Impaired Driving	_____ (34)
_____ (23)	Possession of Drugs	_____ (35)
_____ (24)	Theft under	_____ (36)
_____ (25)	Violations of Probations or Parole	_____ (37)
_____ (26)	Theft over	_____ (38)
_____ (27)	Fraud	_____ (39)
_____ (28)	Assault	_____ (40)
_____ (29)	Trafficking in Drugs	_____ (41)

___ 30	Armed Robbery	___ 47	
___ 31	Rape	___ 43	
___ 32	Murder or Attempted	___ 44	M

N. HOW WERE YOU REFERRED FOR METHADONE TREATMENT?

(1) Self
(2) Doctor
(3) Social Service
(4) Hospital
(5) Friend
(6) Spouse
(7) Other (specify, _____)
(9) No response

___ 45 N

O. STATE PAST METHODS OF TREATMENT AND THEIR FREQUENCIES PRIOR TO YOUR PRESENT PARTICIPATION IN THIS METHADONE PROGRAM.

(0) None (9) No response

___ 46 Chemotherapy withdrawal

___ 47 Chemotherapy maintenance

___ 48 Psychological testing

___ 49 Individual psychotherapy

___ 50 Group therapy

___ 51 Milieu therapy

___ 52 Other (specify, _____)

O

P. IN TERMS OF YOUR PAST TREATMENT WHERE DID THIS TAKE PLACE AND HOW MANY TIMES WERE YOU TREATED THERE BEFORE ENTERING THE METHADONE PROGRAM.

(0) None (9) No response

___ 53 Private medical clinic

___ 54 Public medical clinic

___ 55 Private medical office

___ 56 Public medical office

___ 57 Hospital

___ 58 Non-medical social service

___ 59 Other (specify, _____)

P

Q. WHAT PROFESSIONS TREATED YOU FOR YOUR HEROIN PROBLEM BEFORE YOU WERE ADMITTED TO THE METHADONE PROGRAM AND HOW MANY TIMES WERE YOU TREATED BY THESE PROFESSIONALS?

(0) None (9) No response

___ 60 Psychiatrist

___ 61 Family doctor

___ 62 Social worker

___ 63 Psychologist

___ 64 Social Service Worker

___ 65 Nurse

___ 66 Other (specify, _____)

Q

R. MEAN METHADONE DOSAGE FOR THE TWO MONTH EXPERIMENTAL PERIOD. ___ 67 68 69 R

S. DAYS OF EXTRANEOUS DRUG USAGE FOR THE EXPERIMENTAL PERIOD. ___ 70 71 S

T. NUMBERS OF WEEKS ATTENDED IN THE VOLUNTARY GROUP THERAPY EXPERIENCE. ___ 72 73 T

U. LENGTH OF METHADONE TREATMENT AT WINDSOR WESTERN HOSPITAL IN WEEKS. ___ 74 75 U

V. SINCE TREATMENT REPORT THE FREQUENCY (per month) OF INVOLVEMENT IN THE LIST OF RECREATIONAL ACTIVITIES THAT MAY BE OF INTEREST TO YOU.

(0) None (9) No response

___ 76 77 art work ___ 15 16 dancing ___ 33 34 sewing

78 79	bars	17 18	driving	35 36	shopping
3 4	bicycling	19 20	exercising	37 38	skating
5 6	billiards	21 22	gardening	39 40	spectator sports
7 8	boating	23 24	hockey	41 42	swimming
9 10	bowling	25 26	listening to music	43 44	T.V.
11 12	camping	27 28	movies	45 46	visiting friends
13 14	concerts	29 30	picnics	47 48	visiting relatives
				49 50	other (specify, _____) V

W. HOW MANY TIMES A MONTH BOTH PRIOR TO AND SINCE TREATMENT HAVE YOU SEEN YOUR RELATIVES AND FRIENDS?

(0) None (9) No response

Before Treatment		After Treatment
51 52	father	71 72
53 54	mother	73 74
55 56	brother(s)	75 76
57 58	sister(s)	77 78
59 60	paternal grandparents	3 4
61 62	maternal grandparents	5 6
63 64	in-laws	7 8
65 66	lover	9 10
67 68	drug-related friends	11 12
69 70	non drug-related friends	13 14

W

X. IN TERMS OF YOUR RELATIONSHIP WITH THE FOLLOWING RELATIVES AND FRIENDS PRIOR TO AND SINCE TREATMENT, HOW WOULD YOU RATE THE QUALITY OF YOUR RELATIONSHIP WITH THEM?

(9) No response

Choose one of the five categories that best describes each of these relationships.

1 - couldn't be worse
2 - less than adequate
3 - adequate
4 - more than adequate
5 - couldn't be better

Before Treatment		After Treatment
15	father	25
16	mother	26
17	brother(s)	27
18	sister(s)	28
19	paternal grandparents	29
20	maternal grandparents	30
21	in-laws	31
22	lover	32
23	drug-related friends	33
24	non drug-related friends	34

X

Y. IN TERMS OF CRIMINAL CHARGES PRIOR TO METHADONE TREATMENT AND AT PRESENT WERE THE FOLLOWING RELATIVES AND FRIENDS INVOLVED IN ILLEGAL ACTIVITY?

(1) yes (2) no (9) no response

Before Treatment		After Treatment
35	father	45
36	mother	46

37		brother(s)	47
38		sister(s)	48
39		paternal grandparents	49
40		maternal grandparents	50
41		in-laws	51
42		lover	52
43		drug-related friends	53
44		non drug-related friends	54

Y

Z. IN TERMS OF DRUG USAGE (INCLUDING ALCOHOLISM) PRIOR TO METHADONE TREATMENT AND AT PRESENT, WERE THE FOLLOWING RELATIVES AND FRIENDS INVOLVED IN DRUG USE?

(1) yes (2) no (9) no response

Before Treatment		After Treatment	
55	father	63	
56	mother	64	
57	brother(s)	65	
58	sister(s)	66	
59	paternal grandparents	67	
60	maternal grandparents	68	
61	in-laws	69	
62	lover	70	

a. IN TERMS OF LEGAL VS. ILLEGAL INCOME SOURCE PRIOR TO METHADONE TREATMENT AND AT PRESENT, WERE THE FOLLOWING RELATIVES AND FRIENDS INVOLVED IN LEGAL OR ILLEGAL INCOME SUPPORT?

(1) legal (2) illegal (9) no response

Before Treatment		After Treatment
71	father	6
72	mother	7
73	brother(s)	8
74	sister(s)	9
75	paternal grandparents	10
76	maternal grandparents	11
77	in-laws	12
3	lover	13
4	drug-related friends	14
5	non drug-related friends	15

APPENDIX B

DEAR METHADONE PATIENT

As many of you are aware Nancy Klages and myself are going to research the methadone maintenance program here at the hospital. This project is in partial fulfillment for our M.S.W. degrees. This effort will hopefully tell us more about you and your needs so as to make for a better program. To accomplish this we would like your co-operation in this study.

None of the data that we gather will violate any confidentiality of any patient. We will, of course, know who each of you are as we proceed in our research; nevertheless, we both categorically state that your name will never be published in this document. We will know much about each of you, but this will remain anonymous. We want each of you to further understand that any information gathered will not be used to punish any patient because he so willingly co-operated with this study. We are after nothing but scientific information and no personal vendetta is operating here.

The study contains three main areas to be evaluated. They are:

(1) urine samples

(2) psychological characteristics, and

(3) social characteristics of the methadone patients at Windsor Western Hospital.

To evaluate the above areas we will use the following procedures.

THE INTERVIEW: From Wednesday, May 8, 1974 to May 10, 1974, we will be giving each of you a private interview at the clinic. The time required of you is approximately thirty minutes. Through this interview we want to understand something of your educational, religious, and occupational background. In general, this will collect the social characteristics of who you are as a person. Finally, we want you to know that these interviews will take place from 9:00 a.m. to 4:30 p.m. on Wednesday, Thursday, and Friday.

THE PSYCHOLOGICALS (PART ONE): On Saturday, May 11, 1974 from 10:00 a.m. to 2:00 p.m. we will give each of you a psychological test at the methadone clinic. We will give one test to half of you and the other test to the other half of the group. The testing time will vary in terms of time required to complete the test. We will have plenty of time so there will be no problem to complete the test during the time given. These tests have no right or wrong answers, they just reveal how you feel about yourself and who you are as a person. The results of these tests can be shared with you in confidence if you wish. This is your choice. Sandwiches, doughnuts, and beverages will be served free of charge to those who attend the testing.

THE PSYCHOLOGICALS (PART TWO): On the following Tuesday, May 7, 1974 at 7:00 p.m. (regular group time) until 10:00

p.m. the second half of the test will be given to the clinic's patients. As before, refreshments will be served to those who attend.

THE URINE SAMPLES: Urines will be taken daily (7 days a week) from Wednesday, May 22, 1974 to Monday, July 22, 1974. This will inconvenience you for the two month period, but this is important information for our study.

For some of you the time-table for both the interview and the psychological testing will be inconvenient; nevertheless, we are flexible enough to arrange alternate times if required. If you do not get tested or interviewed the first time around, we will contact you for an appointment.

We want to thank each of you in advance for your cooperation in this effort. If you have any questions concerning this research effort, do not hesitate to contact Nancy or myself.

Yours truly,

Len Grannemann

Nancy Klages

P.S. Please select a time that you could be free for half an hour for a personal interview with Nancy or myself from Wednesday, May 8 and Friday, May 10 from 9:00 a.m. to 4:30 p.m. SEE SIGN UP SHEETS.

APPENDIX C

WINDSOR WESTERN HOSPITAL CENTRE
I.O.D.E. UNIT
WINDSOR, ONTARIO
(UNIVERSITY OF WINDSOR)

Name: _____
Address: _____
City: _____
Tel. No.: _____

CONSENT FORM

FOR METHADONE RESEARCH PROJECT

The following is to be signed by the research subject.

The following is to be read over and explained to the signatory who stated that he/she understood same and offered his/her signature agreeing thereto.

---

1. RELEASE OF INFORMATION

I, the undersigned, hereby authorize Windsor Western Hospital Centre to release any and all information from my medical record to any medical, social and/or educational authority where in the opinion of the hospital, this information will be used for the benefit of the subject.

I also authorize Windsor Western Hospital Centre to release information as to the nature of my illness, for scientific or teaching purposes.

2. MEDICAL PROCEDURE

I, the undersigned, understand that this study necessitates urine collection for a two month period and hereby consent to the use of these results for the research project.

3. GENERAL INFORMATION

I, the undersigned, understand that this study may necessitate the occasional interview where details of medication are divulged, and hereby consent to release such information. Further, I release the information of my social history, as gathered by a questionnaire, to be used in this research project.

4. GENERAL COMMENT

I, the unsigned, have been made aware of the relevant

details of the study in which I am going to participate. The procedures to be followed in this study have been fully explained to me, and I agree to participate in the study..

Date: _____

I have read 1, 2, 3, 4, and give my consent/authorization to all four (4) sections.

METHADONE PATIENT

Witness:

_____ _____

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VITA

Leonard Grannemann was born on April 19, 1946 in Washington, Missouri. He received his elementary and secondary education in the same city. After graduating from high school in 1964, Mr. Grannemann attended Southwest Missouri State College at Springfield, Missouri. He earned, in 1968, a B.Sc. degree in Sociology. After completion of his studies he entered the field of secondary education for one year.

Mr. Grannemann immigrated to Canada in 1969. In October of 1969 Mr. Grannemann joined the staff of the Children's Aid Society of Metropolitan Toronto. He remained there for three years. Two of those years were spent as a worker in the protection department while the last year was spent as a supervisor for the emergency night duty branch of that agency.

He returned to the University of Windsor to pursue an undergraduate degree in Social Work in the summer of 1972 and graduated with his B.S.W. in May 1973. He later entered the Master of Social Work program at the same university where he expects to graduate in October 1974.

During his undergraduate work at Windsor his field practicum was at Crossroads Human Growth Community. His

placement during graduate work was at the Psychological Centre at the University.

Mr. Grannemann has served on the Promotion and Tenure, Appointment, and the Field Work committee for the School of Social Work. In addition to committee work, he was a teaching assistant for an introductory Social Work class during his Master's candidate year.

VITA

Nancy Klages was born on May 30, 1950 in Owen Sound, Ontario. After completing her elementary and secondary education in that city she pursued a B.A. in Sociology and Psychology at Waterloo Lutheran University. Upon graduation in 1971, she worked at Cedar Springs Ontario Hospital School Social Work department as a social work intern. In January of 1972 she was employed by the Department of Social and Family Services as a research assistant in an evaluative study of Community and Family Services, a family service agency in Chatham, Ontario. After completion of the Chatham Study she was employed by Mental Health Kent County as the executive worker for a two-month period.

In July of 1972 she pursued professional social work training at University of Windsor School of Social Work. She graduated with a B.S.W. degree in May 1973 and returned the following year to the same University to pursue a M.S.W. degree. Miss Klages expects to graduate in October 1974.

Her undergraduate field placement was at Kent County Children's Aid Society in Chatham, Ontario. Miss Klages graduate practicum was with Maryvale, a treatment centre for emotionally disturbed girls.